DOCUMENT RESUME

ED 102 722 80 EA 006 843

TITLE	Costs of Educational Accountability -- A Maryland Exploratory Study.
INSTITUTION	Colorado State Dept. of Education, Denver. Cooperative Accountability Project.; Maryland State Dept. of Education, Baltimore.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
REPORT NO	CAP-Bull-5245
PUB DATE	74
NOTE	62p.
AVAILABLE FROM	State Educational Accountability Repository (SEAR), Miss Phyllis Hawthorne, Research Analyst, Wisconsin Department of Public Instruction, 126 Langdon Street, Madison, Wisconsin 53702
EDRS PRICE	MF-$0.76 HC-$3.32 PLUS POSTAGE
DESCRIPTORS	*Cost Effectiveness; Data Analysis; *Educational Accountability; Educational Research; Elementary Secondary Education; *Evaluation Criteria; Information Dissemination; Instrumentation; Interviews; *Program Budgeting; *Program Planning; State Departments of Education; State Surveys; Systems Approach; Tables (Data)
IDENTIFIERS	Elementary Secondary Education Act Title V; ESEA Title V; *Maryland; PPBS; Program Planning Budgeting Systems

ABSTRACT

The Maryland State Department of Education participated with the Cooperative Accountability Project (CAP) in an exploratory study of the cost-pricing of educational accountability components. The exploratory study was undertaken to determine the state of the art in cost-pricing of accountability components at the State and local educational levels and to enable the organizations to make recommendations about necessary, future research in this field. Four educational accountability components were identified: goal development and implementation, objective development and implementation, status surveying of student achievement, and program development. Based on these components, a survey instrument was constructed to obtain information from local school systems about the costs involved in actually providing information to decisionmakers. The basic conclusion reached in the survey is that smaller school systems will require additional financial aid and technical assistance in establishing a comprehensive accountability program. (Author/WM)

BEST COPY AVAILABLE

PROJECT OPERATIONS BOARD

CAP is guided by a Project Operations Board consisting of the chief state school officers of the co-operating states or their designees.

COLORADO Calvin M. Frazier, Commissioner;* and Edwin E. Steinbrecher, Assistant Commissioner, Department of Education

FLORIDA Ralph D. Turlington, Commissioner; and Crane Walker, Administrator, Educational Accountability, Department of Education

MARYLAND James A. Sensenbaugh, State Superintendent; and Francis X. McIntyre, State Co-ordinator for Accountability, Department of Education

MICHIGAN John W. Porter, Superintendent of Public Instruction; and C. Philip Kearney, Associate Superintendent, Department of Education

MINNESOTA Howard B. Casmey, Commissioner; and John W. Adams, Director, State Educational Assessment, Department of Education

PENNSYLVANIA John C. Pittenger, Secretary; and Thomas E. Kendig, Chief, Division of Educational Quality Assessment, Department of Education

WISCONSIN Barbara S. Thompson, State Superintendent; and Archie A. Buchmiller, Assistant State Superintendent, Department of Public Instruction

*Calvin M. Frazier, Chairman, CAP Project Operations Board

The Project Operations Board meets quarterly for Project development.

Project Staff
Arthur R. Olson, Director

U.S. Office of Education
Dexter A. Magers, CAP Coordinator

CAP is a seven-state, three-year project initiated in April, 1972, and financed by funds provided under the Elementary and Secondary Education Act of 1965 (Public Law 89-10, Title V, Section 505, as amended) with Colorado as the administering state.

Cooperating states are: Florida, Maryland, Michigan, Minnesota, Pennsylvania, and Wisconsin.

The activity which is the subject of this report was supported in whole or in part by the U.S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.

BEST COPY AVAILABLE

ED102722

BEST COPY AVAILABLE

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

COSTS OF EDUCATIONAL ACCOUNTABILITY —

A Maryland Exploratory Study

Cooperative Accountability Project
Denver, Colorado
1974

EA 006 843

Bulletin No. 5245

Program Administrators

Alpheus White
Dexter A. Magers
U.S. Office of Education
Bureau of Elementary and Secondary Education
Division of State Assistance

Maryland Coordinator

Francis X. McIntyre
State Coordinator
Office of Accountability
Maryland State Department of Education

Single copies for Colorado requestors may be obtained from:

COOPERATIVE ACCOUNTABILITY PROJECT
Arthur R. Olson, Director
Colorado Department of Education
1362 Lincoln Street
Denver, Colorado 80203
Phone (303) 892-2133

All other requests should be referred to:

STATE EDUCATIONAL ACCOUNTABILITY REPOSITORY (SEAR)
Miss Phyllis Hawthorne, Research Analyst
Wisconsin Department of Public Instruction
126 Langdon Street
Madison, Wisconsin 53702
Phone (608) 266-1344

MARYLAND STATE BOARD OF EDUCATION

J. Jerome Framptom, Jr., President
(Federalsburg)

Richard Schifter, Vice-President
(Bethesda)

William N. Goldsborough
(Oakland)

Lawrence Miller
(Baltimore)

Mrs. Rogers W. Moyer
(Annapolis)

Mrs. William F. Robie
(Fort Washington)

William G. Sykes
(Baltimore)

James A. Sensenbaugh, Secretary-Treasurer of the Board
and State Superintendent of Schools

MARYLAND STATE DEPARTMENT OF EDUCATION

Quentin L. Earhart, Deputy State Superintendent of Schools

Richard K. McKay
Assistant State Superintendent
Division of Research, Evaluation,
and Information Systems

Francis X. McIntyre
State Coordinator
Office of Accountability

BUREAU OF EDUCATIONAL RESEARCH AND FIELD SERVICES
COLLEGE OF EDUCATION, UNIVERSITY OF MARYLAND

Gilbert R. Austin
Associate Director

Stephen P. Holowenzak
Research Consultant

FOREWORD

Rising public and legislative interest concerning the cost of public education is one of the most pressing issues in education today. This interest often is given expression in the term, *educational accountability.* Few, however, ask questions such as, "Accountability at what cost?" and "Which educational accountability components are most important to analyze?" These questions and the mandates of the Maryland educational accountability law sparked our concern.

The Maryland State Department of Education is pleased to have participated with the Cooperative Accountability Project (CAP) in an exploratory study of the cost-pricing of educational accountability components within the framework of the Maryland school system.

The exploratory study was undertaken to determine the state of the art in cost-pricing of accountability components at the state and local educational levels and to make recommendations about necessary, future research in this field. Information on the cost-pricing of accountability components is scarce. It is hoped that the knowledge gained in this exploratory study in a state such as Maryland will be useful to educators in other states.

In this study, four educational accountability components were identified from the Maryland Educational Accountability Act, namely, goal development and implementation; objective development and implementation; status surveying of student achievement; and program development. Based on these components, a survey instrument was constructed to obtain information from local school systems about the costs involved in actually providing information to decision makers.

This study was conducted in its final stages under contract by the Bureau of Educational Research and Field Services, College of Education, University of Maryland. The staff of the Maryland State Department of Education has been constantly involved in the study.

We sincerely appreciate the cooperation of the superintendents of our local school systems and their respective accountability coordinators, as well as other individuals who participated in this project.

James A. Sensenbaugh
Maryland State Superintendent of Schools

COMMENTS FROM CAP

Since public education is in the political domain, many decisions affecting education are made on the basis of the personal interests of the decision makers. A vote in the General Assembly...a judgment by the Governor...decisions by superintendents, teachers, and principals...votes by school boards and committees...and actions of educational organizations tend to reflect considerations other than the prime constituency for educational decision making, namely, students in the schools.

Where decisions in public education do not reflect some general attempts to move students toward the agreed upon goals of education, the publics being served are more insistent concerning accountability in all of its many ramifications. In turn, the components of accountability invlove the expenditure of funds.

The establishment of goals, writing objectives, conducting needs assessment, implementing programs, evaluating, and reporting are essential elements in accountability, and all of these accountability components carry a price tag.

If educational decision makers are to move forward in establishing accountability systems at state and local levels, careful consideration must be given to the cost factors.

The many individuals and groups involved in the educational accountability process will find this publication makes a valuable beginning in the complex task of determining specific costs associated with accountability. The members of the Maryland State Department of Education and the state superintendents are to be commended for initiating the compilation of accountability cost information. This document should provide a starting point and valuable guidelines for cost-pricing efforts in many other locations.

Arthur R. Olson, Director
Cooperative Accountability Project

TABLE OF CONTENTS

Chapter		Page
I	INTRODUCTION	1
	Scope of the Study	1
	Background of the Study	1
	Maryland Educational Accountability Act	5
II	SURVEY INSTRUMENTATION	9
	Interview Questionnaire	9
	Survey Materials	14
	Observations	14
III	ANALYSIS OF THE DATA	15
	General Procedures	15
	School System Size	15
	Small-Sized School Systems	15
	Medium-Sized School Systems	17
	Large-Sized School Systems	19
	Income Levels	21
	Program Development Funding	21
	Small-Sized School Systems	22
	Medium-Sized School Systems	23
	Large-Sized School Systems	24
	Summary of Findings	25
IV	CONCLUSIONS AND RECOMMENDATIONS	27
	Exploratory Study Conclusions	27
	Long-Term Goals	27
	Defining Accountability Components	27
	Determining Component Costs	28
	Short-Term Objectives	28
	Recommended Checklists for ECCAP Activities	29
	Recommendations	29
	APPENDIXES	31

LIST OF TABLES

Table		Page
1.1	Number of Maryland Public Schools: September 30, 1970	3
1.2	Positions in Instructional Function K-12: Maryland Public Schools: 1970-71	4
1.3	Cost Per Pupil Belonging for Current Expenses: By Function: K-12: Maryland Public Schools: 1970-71	6
1.4	Receipts From All Sources for Current Expenses: Maryland Public Schools: 1970-71	7
3.1	Estimated Goal Development and Implementation Costs (School System Enrollment: less than 10,000 students)	16
3.2	Estimated Objective Development and Implementation Costs (School System Enrollment: less than 10,000 students)	16
3.3	Projected Status Surveying Costs (School System Enrollment: less than 10,000 students)	17
3.4	Estimated Goal Development and Implementation Costs (School System Enrollment: between 10,000 & 50,000 students)	18
3.5	Estimated Objective Development and Implementation Costs (School System Enrollment: between 10,000 & 50,000 students)	18
3.6	Projected Status Surveying Costs (School System Enrollment: between 10,000 & 50,000 students)	19
3.7	Estimated Goal Development and Implementation Costs (School System Enrollment: over 50,000 students)	20
3.8	Estimated Objective Development and Implementation Costs (School System Enrollment: over 50,000 students)	20
3.9	Estimated Cost for Status Surveying (School System Enrollment: over 50,000 students)	21
3.10	Estimated Per-Pupil Accountability Costs	22
3.11	Cost Per Pupil Belonging: Current Expenses: Maryland Public Schools: 1970-71	23
3.12	Federal, State, and Local Program Expenditures Per Pupil (School System Enrollment: less than 10,000 students)	24
3.13	Federal, State, and Local Program Expenditures Per Pupil (School System Enrollment: between 10,000 and 50,000 students)	24
3.14	Federal, State, and Local Program Expenditures Per Pupil (School System Enrollment: over 50,000 students	25
3.15	Summary of Cost Estimates	26

APPENDIXES

B.1 Projected Major Subject Areas of Concentration for 1972-73 Associated With Accountability Component #2 - Objective Development and Implementation (School System Enrollment: less than 10,000 students) 36

B.2 Projected Major Subject Areas of Concentration for 1972-73 Associated With Accountability Component #2 - Objective Development and Implementation (School System Enrollment: between 10,000 & 50,000 students) 37

B.3 Projected Major Subject Areas of Concentration for 1972-73 Associated With Accountability Component #2 - Objective Development and Implementation (School System Enrollment: over 50,000 students) 37

C.1 Checklist of Achievement, Intelligence and Aptitude Tests Used by School Systems (School System Enrollment: less than 10,000 students) 41

C.2 Checklist of Achievement, Intelligence and Aptitude Tests Used by School Systems (School System Enrollment: between 10,000 & 50,000 students) 42

C.3 Checklist of Achievement, Intelligence and Aptitude Tests Used by School Systems (School System Enrollment: over 50,000 students) 42

C.4 Estimated Testing Porgram Cost for Status Survey Component (School System Enrollment: less than 10,000 students) 43

C.5 Estimated Testing Program Cost for Status Survey Component (School System Enrollment: between 10,000 & 50,000 students) 44

C.6 Estimated Testing Porgram Cost for Status Survey Component (School System Enrollment: over 50,000 students) 44

LIST OF FIGURES

Figure		Page
1.1	State of Maryland	2
1.2	Maryland Educational Accountability Act Article 77, Section 28A (Senate Bill No. 166)	5
2.1	Survey of the Costs of Educational Accountability - Interview Questionnaire - Part I - Educational Goal Development and Implementation	10
2.2	Survey of the Costs of Educational Accountability - Part II - Objective Development and Implementation	11
2.3	Survey of Costs of Educational Accountability - Part III - Status Survey	12
2.4	Survey of Costs of Educational Accountability - Part IV - Program Development	13

LIST OF SAMPLE WORK SHEETS

Work Sheet		Page
1	Sample Work Sheet for Accountability Component Goal Development and Implementation Costs at Local and/or State Level	39
2	Sample Work Sheet for Accountability Component Objective Development and Implementation Costs at Local and/or State Level	40
3	Sample Work Sheet for Accountability Component Status Surveying Costs at Local and/or State Level	46

CHAPTER I
INTRODUCTION

Scope of the Study

This study was initiated with the objective of developing and improving educational accountability cost measures, both within local school systems and for entire states. Attempts to quantify accountability may be traced to the early 1960s when both the Department of Defense and the Bureau of the Budget began advocating Program Planning-and-Budgeting Systems (PPBS). PPBS refers to the attempt to develop procedures for specifying goals and objectives and for evaluating alternatives considered in terms of social benefits and costs.

As one of the participating states in the Cooperative Accountability Project (CAP), Maryland agreed to sponsor an exploratory study designed to delineate the costs and develop the materials to implement a component cost study for a comprehensive educational accountability program. It was recognized that the traditional information collected and disseminated by state departments of education reflects imperfectly the various cost issues that are to be analyzed in an effective accountability effort.

Accountability initiative originated within the administrative sections of government, and recent legislative mandates also are directed toward similar ends. Rising school costs and taxes give impetus to public insistence for evaluation of educational programs, public dissemination of evaluation results, and corrective action based on those results. The National Assessment of Educational Progress (NAEP), the 1965 ESEA Title I project with its focus on educationally and culturally deprived children, and the 1966 Coleman Report on *Equality of Educational Opportunity* [1] also contributed significantly to the accountability movement and to renewed emphasis on measuring student achievement.

The Maryland State Department of Education (MSDE) was called upon to conduct an exploratory study to estimate the costs of the educational components within a comprehensive accountability program. The general purpose of this study is to determine the state-of-the-art in estimating the cost of accountability components as they currently exist in the state of Maryland and to recommend extensions of the component cost system to other states.

More specifically, the *Costs of Educational Accountability* exploratory study in Maryland is intended to make available to MSDE and CAP accountability cost information which has the greatest possible utility in so far as it is related to four Maryland accountability components identified as:

1. Educational goal development and implementation
2. Objective development and implementation
3. Status surveying of activities associated with assessment of student performance, competency, and achievement levels
4. Program development

Background of the Study

In order to understand the results of this exploratory study, some background information is required concerning the Maryland educational system. There are 24 school systems in the state, one for each of 23 counties plus one for the city of Baltimore.

---

[1] James S. Coleman and others, *Equality of Educational Opportunity* (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, 1966)

BEST COPY AVAILABLE

FIGURE 1.1

STATE OF MARYLAND

These school systems range from those located in highly urbanized areas which are concentrated in the Boston-Washington corridor of the eastern megalopolis, to those found in the rural, agrarian - based communities of the Eastern Shore and areas of western Maryland in Appalachia. Thus it can be seen that tremendous heterogeneity exists among the 24 school systems. Such variety tends to render this study more interesting, for the closer Maryland is to being a microcosm of the nation, the more relevant will be the generalizations which may accrue from the study.

Table 1.1 describes the numbers and types of schools which existed in each of Maryland's school systems in September, 1970. The diversity in local school systems is apparent. Note the two rural counties which still have one-teacher elementary schools. Surprisingly, this still occurs in what is predominantly a highly urbanized state.

BEST COPY AVAILABLE

TABLE 1.1

Number of Maryland Public Schools: September 30, 1970

Local Unit	Grand Total	Elementary Only*	Secondary Only					Combined		
			Total	Junior (Grades 7-9)	Jr.-Sr. (Grades 7-12)	Senior (Grades 9-12)	Vocational-Technical	Total	Middle	Other
Total State	1,306	943	291	119	46	110	16	72	38	34
Allegany	38	27	8	2	3	2	1	3	-	3
Anne Arundel	99	79	19	10	1	7	1	1	1	-
Baltimore City	211	158	45	16	13	14	2	8	-	8
Baltimore	154	108	42	20	3	16	3	4	1	3
Calvert	13	11	1	-	-	1	-	1	1	-
Caroline	10	6	4	2	-	2	-	-	-	-
Carroll	26	17	5	1	1	3	-	4	3	1
Cecil	25	16	6	-	3	2	1	3	3	-
Charles	24	15	4	-	-	3	1	5	4	1
Dorchester	20	16	4	1	3	-	-	-	-	-
Frederick	33	23	7	-	5	2	-	3	2	1
Garrett	19	15	2	-	2	-	-	2	-	2
Harford	38	27	8	2	1	4	1	3	2	1
Howard	29	18	5	-	-	4	1	6	6	-
Kent	8	4	1	-	-	1	-	3	1	2
Montgomery	187	139	46	24	5	17	-	2	2	-
Prince George's	226	169	57	36	3	17	1	-	-	-
Queen Anne's	12	8	2	1	-	1	-	2	2	-
St. Mary's	23	16	3	-	-	2	1	4	3	1
Somerset	16	^	3	1	-	2	-	4	1	3
Talbot	13	10	2	1	-	1	-	1	-	1
Washington	44	29	7	-	1	5	1	8	6	2
Wicomico	24	16	6	2	1	2	1	2	-	2
Worcester	14	7	4	-	1	2	1	3	-	3

*Includes following one-teacher schools: Garrett, 1; Somerset, 1.

Source: Maryland State Board of Education, *105th Annual Report: A Statistical Review for the Year Ending June 30, 1971*, Department of Education, Table 3.

BEST COPY AVAILABLE

TABLE 1.2

Positions in Instructional Function K-12: Maryland Public Schools: 1970-71

Local Unit	Grand Total All Instructional Personnel	Professional Staff									
		Total	Asst. Supts., Directors & Supervisors	Principals & Vice Principals	Teachers	Librarians	Guidance Counselors	Audio-Visual Personnel	Psychological Personnel	Aides	Secretaries and Clerks
TOTAL	53,833	46,424	700	2,285	41,099	998	1,169	13	160	4,145	3,264
Allegany	1,008	854	16	45	764	14	14	-	1	103	51
Anne Arundel	3,880	3,557	58	147	3,245	27	79	1	-	-	323
Baltimore City	11,244	9,333	195	440	8,187	174	271	-	66	1,450	461
Baltimore	8,074	7,131	75	350	6,257	195	221	10	23	465	478
Calvert	321	255	4	13	229	6	3	-	-	49	17
Caroline	354	284	6	14	251	6	7	-	-	53	14
Carroll	893	797	16	41	738	-	-	-	2	49	47
Cecil	654	562	10	33	489	14	16	-	-	48	44
Charles	795	628	14	34	557	11	11	-	1	105	62
Dorchester	447	336	6	30	280	10	8	1	1	96	15
Frederick	1,301	1,096	15	59	966	33	21	-	2	123	82
Garrett	316	284	5	18	254	3	4	-	-	28	4
Harford	1,707	1,541	28	76	1,369	36	31	1	-	61	105
Howard	1,025	865	21	57	730	32	25	-	-	65	95
Kent	258	219	13	10	181	7	7	-	1	24	15
Montgomery	7,892	6,623	92	327	5,829	169	178	-	28	648	621
Prince George's	9,420	8,498	55	406	7,612	190	202	-	33	340	582
Queen Anne's	286	246	9	13	211	5	8	-	-	24	16
St. Mary's	737	567	11	29	493	20	13	-	1	119	51
Somerset	297	237	5	22	205	2	3	-	-	43	17
Talbot	319	270	6	8	244	7	5	-	-	35	14
Washington	1,344	1,156	17	63	1,035	20	21	-	-	110	78
Wicomico	885	745	16	33	674	7	14	-	1	83	57
Worcester	376	340	7	17	299	10	7	-	-	21	15

Source: Maryland State Board of Education, *105th Annual Report: A statistical Review for the Year Ending June 30, 1971* (Baltimore: Maryland State Department of Education, 1972), Table 63.

Table 1.2 describes the composition of the professional school staffs, by county. The varying proportions of different categories of professional specialties imply differing goals and objectives among school systems. Cost information concerning their differing goals and objectives is pertinent to a variety of school systems elsewhere in the United States.

Not only do Maryland school systems differ widely across the state in terms of enrollment, number of schools, and staff, but they also vary in terms of per-pupil expenditures. These per-pupil expenditures obviously are a result of the school district's general and relative socioeconomic status. The simple correlation between measures of an area's economic status, in terms of either per capita income or median family income, and per-pupil expenditures, is in the neighborhood of .70 as would be expected *a priori.* Thus the relative economic status of a school system also is an important variable which should be analyzed with respect to its effects on the establishment of goals and objectives.

Table 1.3 illustrates the per-pupil expenditures for each of the 24 school systems. The wealthiest county, Montgomery, has the highest per-pupil expenditures while the county with the lowest per capita income, Somerset, spends the least on the average student.

Table 1.4 shows the sources of revenues in each of the school systems. Large variation exists here too in the percentage derived from each of the three major sources of financing: local, state, and federal. While some systems are better able to finance their educational systems locally, other areas appear better able to find and tap external funding sources. Thus the per-pupil expenditures must be interpreted in light of both the school system's ability to finance the system and the absolute size of the system. The analysis which follows, therefore, will be undertaken both in terms of size of the school system as measured by enrollment and in terms of the system's income levels.

Maryland Educational Accountability Act

A brief review of the Educational Accountability Act that exists in the state of Maryland will conclude this background discussion. The Act is reprinted in Figure 1.2.

FIGURE 1.2

Article 77, S. 28A, reproduced below, was passed in the 1972 legislative session of the Maryland State Legislature. The bill provides for a program of educational accountability for the public schools of Maryland. Members of the State Department of Education worked with legislators on this bill. Although the bill was to take effect July 1, 1972, funding was not provided until July 1, 1973.

ARTICLE 77, SECTION 28A
(Senate Bill No. 166)

The purposes of this Act are to provide for the establishment of educational accountability in the public education system of Maryland, to assure that educational programs operated in the public schools of Maryland lead to the attainment of established objectives for education, to provide information for accurate analysis of the costs associated with public education programs, and to provide information for an analysis of the differential effectiveness of instructional programs...

(a) Educational accountability program. The State Board of Education and State Superintendent of Schools, each Board of Education and every school system, and every school, shall implement a program of education accountability for the operation and management of the public schools, which shall include the following:

    (1) The State Board of Education and the State Superintendent of Schools shall assist each local school board and school system in developing and implementing educational goals and objectives for subject areas including, but not limited to, reading, writing and mathematics.

BEST COPY AVAILABLE

TABLE 1.3

Cost Per Pupil Belonging for Current Expenses: By Function: K*-12: Maryland Public Schools: 1970-71

Local Unit	Total Current Expense Including Transportation	Pupil Transportation	Total Current Expense Excluding Transportation	Instruction	Pupil Personnel Services	Health Services	Operation of Plant	Maintenance of Plant	Administration	Fixed Charges
Total State	$858.83	$38.47	$820.36	$649.24	$8.99	$2.21	$78.43	$31.59	$23.02	$26.88
Allegany	780.82	53.32	707.50	564.79	4.56	1.48	75.22	22.68	15.40	23.37
Anne Arundel	760.71	36.34	724.37	603.53	10.60	-	55.62	19.41	18.98	16.23
Baltimore City	826.07	29.76	796.31	607.99	11.03	2.29	82.85	36.54	26.94	28.67
Baltimore	875.18	26.39	848.79	678.45	5.38	3.44	88.05	34.52	17.68	21.27
Calvert	801.34	101.91	699.43	557.26	6.74	2.85	52.40	26.97	33.57	19.64
Caroline	740.48	84.02	656.46	540.21	6.32	2.62	56.70	19.63	14.77	16.21
Carroll	710.91	59.65	651.26	535.79	5.49	0.35	50.52	21.26	18.59	19.26
Cecil	708.13	53.09	655.04	519.55	7.22	1.03	66.82	23.49	22.91	14.02
Charles	790.76	89.88	700.88	537.45	7.91	0.61	82.70	26.66	24.16	21.39
Dorchester	800.11	80.92	719.19	572.96	4.38	2.58	53.28	39.53	24.86	21.60
Frederick	787.89	42.37	745.52	602.16	4.45	2.90	60.81	23.23	27.10	24.87
Garrett	739.02	113.88	625.14	508.48	3.30	8.16	43.73	16.04	21.61	23.82
Harford	749.01	50.92	698.09	565.06	4.47	2.83	59.10	36.79	17.65	12.19
Howard	855.03	67.97	787.06	655.40	5.78	0.45	67.85	19.30	22.58	15.70
Kent	832.19	69.56	762.63	616.94	9.47	2.21	52.55	29.22	24.06	28.18
Montgomery	1,083.22	31.42	1,051.80	809.48	16.26	0.15	98.53	38.69	37.98	50.71
Prince George's	884.90	29.21	855.69	684.15	8.11	3.58	81.71	32.75	18.12	27.27
Queen Anne's	772.95	103.75	669.20	549.57	4.37	2.03	56.61	27.29	13.51	15.82
St. Mary's	750.70	76.78	673.92	534.96	10.13	1.09	63.80	25.99	17.55	20.40
Somerset	687.50	81.83	605.67	492.77	5.66	6.13	44.93	24.15	19.91	12.12
Talbot	826.51	59.88	766.63	629.63	6.29	1.92	58.65	26.89	21.49	21.76
Washington	800.00	46.73	753.27	607.32	5.28	4.75	80.15	21.87	12.56	21.34
Wicomico	693.01	63.36	629.65	527.82	2.31	2.79	51.36	17.54	12.41	15.42
Worcester	758.36	85.36	673.00	569.30	2.53	1.38	52.92	19.48	14.21	13.18

*Half-time kindergarten pupils are expressed in full-time equivalents in arriving at per-pupil costs.

NOTE: Expenditures by State for Teachers' Retirement and Social Security are not included.

Source: Maryland State Board of Education, *105th Annual Report: A Statistical Review for the Year Ending June 30, 1971*, Department of Education, Table 144.

BEST COPY AVAILABLE

TABLE 1.4

Receipts From All Sources for Current Expenses:* Maryland Public Schools: 1970-71
(Includes Teachers' Retirement and Social Security Paid Direct by State)

Local Unit	Total Receipts	Revenue				Nonrevenue ‡	Percent from Each Source			
		State	Federal	Local			State	Federal	Local	Non-revenue
				Appropriations	Other †					
Total State	$837,584,392	$275,671,439	$72,959,189	$483,433,939	$4,564,836	$954,989	32.9	8.7	58.3	0.1
Allegany	14,622,785	5,831,488	1,254,382	7,477,285	51,316	8,314	39.9	8.6	51.5	a
Anne Arundel	59,050,787	21,511,632	5,045,764	32,084,532	408,424	435	36.4	8.6	55.0	a
Baltimore City	173,446,668	67,312,878	19,773,492	85,950,799	409,499	-	38.8	11.4	49.8	-
Baltimore	127,046,067	34,780,590	3,968,055	87,922,206	375,216	-	27.4	3.1	69.5	-
Calvert	5,006,566	2,320,443	636,713	2,034,105	12,775	2,530	46.3	12.7	40.9	0.1
Caroline	4,221,363	2,242,275	573,136	1,397,416	6,913	1,623	53.1	13.6	33.3	a
Carroll	12,551,810	5,204,252	683,982	6,562,606	78,160	22,810	41.5	5.4	52.9	0.2
Cecil	9,694,336	4,036,013	894,863	4,713,216	49,420	824	41.6	9.2	49.2	a
Charles	12,174,449	4,978,020	1,700,445	5,446,561	48,388	1,035	40.9	14.0	45.1	a
Dorchester	5,743,977	2,365,940	858,688	2,514,315	1,662	3,372	41.2	14.9	43.8	0.1
Frederick	17,269,117	5,321,808	1,692,239	9,963,232	291,838	-	30.8	9.8	59.4	-
Garrett	4,503,210	2,501,539	792,235	1,200,245	8,566	625	55.6	17.6	26.8	a
Harford	23,450,773	9,496,773	2,510,982	11,306,838	136,180	-	40.5	10.7	48.8	-
Howard	16,645,650	5,208,373	1,149,680	10,107,500	180,097	-	31.3	6.9	61.8	-
Kent	3,635,853	1,157,877	472,678	1,982,833	10,344	12,121	31.9	13.0	54.8	0.3
Montgomery	145,308,527	34,828,501	9,088,948	99,658,078	1,348,967	384,033	24.0	6.2	69.5	0.3
Prince George's	145,991,568	42,499,739	14,888,155	87,323,901	775,263	504,510	29.1	10.2	60.4	0.3
Queen Anne's	3,911,928	1,595,250	331,423	1,972,385	10,959	1,911	40.8	8.5	50.7	a
St. Mary's	9,193,695	4,860,714	2,097,374	2,150,540	84,408	659	52.9	22.8	24.3	a
Somerset	3,470,635	1,941,606	587,004	928,888	11,958	1,179	55.9	16.9	27.1	0.1
Talbot	4,513,887	1,341,787	551,904	2,589,113	30,728	355	29.7	12.2	58.1	a
Washington	20,246,918	7,406,034	2,051,043	10,773,851	15,514	476	36.6	10.1	53.3	a
Wicomico	10,668,848	5,021,231	844,760	4,610,996	190,967	894	47.1	7.9	45.0	a
Worcester	5,214,975	1,906,676	511,244	2,762,498	27,274	7,283	36.6	9.8	53.5	0.1

*Includes current expense for capital outlay and federal funds for school breakfast, lunch, and special milk.
†Includes the following: tuition, refunds, transfers from other school units, and all other sources.
‡Includes sale of property and equipment, insurance recovery, and other nonrevenue receipts.
a Less than 0.1 percent.

Source: Maryland State Board of Education, *105th Annual Report: A Statistical Review for the Year Ending June 30, 1971*, Department of Education, Table 120.

(2) Each school, with the assistance of its local board of education and school system, shall survey the current status of student achievement in reading, language, mathematics, and other areas in order to assess its needs.
(3) Each school shall establish as the basis of its assessment project goals and objectives which are in keeping with the goals and objectives established by its board of education and the State Board of Education.
(4) Each school, with the assistance of its local board of education, the State Board of Education and the State Superintendent of Schools, shall develop programs for meeting its needs on the basis of priorities which it shall set.
(5) Evaluation programs shall concurrently be developed to determine if the goals and objectives are being met.
(6) Re-evaluation of programs, goals and objectives shall be regularly undertaken.

(b) The State Department of Education shall assist the local boards of education in establishing this program by providing guidelines for development and implementation of the program by the local boards, and by providing assistance and corrdination where needed and requested by those boards.

(c) Beginning on July 1, 1973, the State Board of Education, upon recommendation of the State Superintendent of Schools, shall include in its annual budget request such funds as it deems necessary to carry out the provisions of this Act.

(d) During January, 1975, and each January thereafter, the State Superintendent of Schools shall transmit to the Governor and to the General Assembly a report which includes, but is not limited to, documentation indicating the progress of the State Department of Education, the local boards of education and each school in the State toward the achievement of their respective goals and objectives and recommendations for legislation which the State Board of Education and the State Superintendent of Schools deem necessary for the improvement of the quality of education in Maryland.

Sec. 2. And be it further enacted that this Act shall take effect July 1, 1972.

The Act requires each local school system to establish goals and objectives and to develop evaluation programs to determine the degree of success achieved. The law does not specify how this evaluation should be implemented.

The State Department of Education has prepared a handbook on the Maryland Accountability Assessment Program (MAAP) which concentrates on measuring the achievement levels of students through the introduction of standardized tests across the state. The handbook says:

> Accountability can be said to exist when the following conditions have been met: (1) the state goals of education reflect the educational needs and interests of the population; (2) minimum student achievement expectations have been developed in each goal area; (3) current student status, recent progress, and needed improvement in each goal area are matters of public record and specific objectives for improving the current status have been adopted; (4) programs to achieve specific objectives have been implemented and finally, (5) the cost of programs, i.e., the cost of achieving goals and objectives, is a matter of public record.[2]

Unfortunately, little attention had been directed toward estimating the costs of implementing MAAP. Among the most critical educational accountability issues to be faced, as observed by CAP and MSDE administrative staff, is determining the costs of accountability programs that meet the specifications of legislative mandates.

---

[2]*Maryland Handbook on the Accountability Assessment Program*, prepared for the Maryland State Department of Education by the Center for Educational Research and Evaluation, Research Triangle Institute. (Baltimore: Maryland State department of Education, 1974).

The Bureau of Educational Research and Field Services (BERFS) at the University of Maryland completed this accountability study in conjunction with the MSDE staff.

The following sections of this monograph present the survey data collected during the exploratory study, analyze them, and offer some preliminary conclusions and recommendations for future research. The traditional data which are regularly collected are inappropriate for the comprehensive analysis required by recent legislation. The survey which was conducted was intended to overcome this shortcoming.

As is often the case with any exploratory study, as many problems as solutions were identified in the Maryland project upon which this monograph is based. Both problems and solutions will be discussed in the final section of this report.

CHAPTER II
SURVEY INSTRUMENTATION

One basic objective for the efforts of the Cooperative Accountability Project is to attempt to develop quantitative measures which educational decision makers may utilize in determining the most efficient accountability allocation in a school budget which necessarily includes many competing activities. CAP therefore agreed that the Maryland State Department of Education should attempt to:

1. Identify and define components of accountability
2. Specify sources and procedures for obtaining useful cost data
3. Collect cost information, by sampling, across a broad spectrum of accountability activities
4. Analyze these sample cost data
5. Recommend procedures for developing and continuing accountability component cost programs

Interview Questionnaire

An exploratory survey of all the county school systems in the state of Maryland was conducted (summer, 1973). The questionnaire used in this survey was developed by professional educators at the state and university levels. Questionnaires were sent to each of the 24 school systems in the state. Over 83% of the counties responded to the questionnaire. Each of the 20 school systems which did respond had designated an *accountability coordinator* who was responsible for completing the questionnaire. The questionnaire used in the exploratory survey is reprinted in Figure 2.1 through Figure 2.4.

FIGURE 2.1

Survey of the Costs of Educational Accountability

Interview Questionnaire

PART I

SB 166
28A(a)

Educational Goal Development and Implementation

(1) *The State Board of Education and the State Superintendent of Schools shall assist each local school board and school system in developing and implementing educational goals and objectives in conformity with Statewide educational objectives for subject areas including, but not limited to, reading, writing, and mathematics. (3) Each school shall establish as the basis of its assessment, project goals and objectives which are in keeping with the goals and objectives established by its board of education and the State Board of Education

Definition: Goal development and implementation are those activities associated with the establishment of school board statements of educational emphasis and direction as developed by boards of education and school administrators. Such statements result from community, professional, and student information sources, and result in statements including both programmatic and priority information. An example of source data would be the results of the recent Maryland Goal Validation and Needs Assessment Study.

What is the current level of activities in generating goals statements for your school or district?

_____ Man-days per year — Accuracy of estimate _____ percent
_____ Dollar expenditures — Accuracy of estimate _____ percent

What is the current level of activities in communicating goals statements to staff? (Include estimates of both preservice and inservice activities for staff and administrators.)

_____ Man-days per year — Accuracy of estimate _____ percent
_____ Dollar expenditures — Accuracy of estimate _____ percent

What is the current level of activities in communicating goals statements to the public?

_____ Man-days per year — Accuracy of estimate _____ percent
_____ Dollar expenditures — Accuracy of estimate _____ percent

What is the current level of activities in preparing reports of goals statements?

_____ Man-days per year — Accuracy of estimate _____ percent
_____ Dollar expenditures — Accuracy of estimate _____ percent

*Numerals used in the text of Figures 2.1 through 2.4 refer to specific paragraphs of the Maryland Educational Act reproduced in Figure 1.2.

FIGURE 2.2

PART II

SB 166
28A(a) Objective Development and Implementation

(1) The State Board of Education and the State Superintendent of schools shall assist each local school board and school system in developing and implementing educational goals and objectives in conformity with statewide educational objectives for subject areas including, but not limited to, reading, writing and mathematics. (3) Each school shall establish as the basis of its assessment, project goals and objectives which are in keeping with the goals and objectives established by its board of education and the State Board of Education.

Definition: Objective development and implementation are those activities associated with the establishment of statements relevant to particular programs or curricular areas which will facilitate the communication between the administration and the classroom. The purpose is to permit the evaluation of such programs and curricular attempts. They are seen as the interpretation of Educational Goals as they are applied at the classroom level to provide feedback and information at the student level. Mager (1968) cites three parts of well stated objectives: (1) that the desired outcomes be stated in terms of observable behaviors, (2) that the conditions under which the behavior is to be displayed be specific, and (3) that the criterion of acceptable performance of the behavior be stated.

_____ What is the current level of activities in establishing objective development and implementation for your school or district?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the current level of activities in communicating objectives to staff?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the current level of activities in communicating objectives to public?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the current level of activities in preparing reports of objectives?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What are the primary areas of concentration for the generating of objectives? Indicate the appropriate areas and levels.

Level	1	2	3	4	5	6	7	8	9	10	11	12
Area												
Reading												
Writing												
Math												
Other (Indicate)												
_____												
_____												
_____												

FIGURE 2.3

PART III

SB 166
28A(a)

Status Survey

(2) Each School, with the assistance of its local board of education and school system, shall survey the current status of student achievement in reading, language and mathematics, and other areas in order to assess its needs. (5) Evaluation programs shall concurrently be developed to determine if the goals and objectives are being met. (6) Re-evaluation of programs, goals and objectives shall be regularly undertaken.

Definition: Status Survey are those activities associated with the assessment of student performance, competency, and achievement levels. These levels may be established by a variety of instruments; attitudinal, interest, aptitude, and achievement based. Examples are follow-up studies, norm referenced tests, criterion referenced tests, and assessment exercises. Repeated Status Surveys over time provide the feedback loop required by the Accountability Bill to the extent that they are based on the established objectives.

What is the current level of activities in status surveying?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the current level of staff involvement in status surveying?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the current level of activities in communicating results of status survey to the public?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the current level of activity in preparing reports of status surveys?

_____ Man-days per year Accuracy of estimate _____ %
_____ Dollar expenditures Accuracy of estimate _____ %

What is the primary evaluation tool in your LEA? (i.e., Norm referenced, Criterion referenced, teacher made, National Assessment).

Answer the following questions for this instrument(s). Indicate the appropriate areas and levels.

Level	1	2	3	4	5	6	7	8	9	10	11	12
Area												
Reading												
Writing												
Math												
Other (Indicate)												
_____												
_____												
_____												

FIGURE 2.4

PART IV

SB 166
28A(a)

Program Development

(4) With the assistance of its local board of education, the State Board of Education, and the State Superintendent of Schools, each school shall develop programs for meeting its needs on the basis of priorities which it shall set.

Definition: Program development includes those activities associated with the programmatic intervention resulting from discrepancies between stated objectives and status survey results. Since curriculum development and change is a continuous process, only those activities associated with systematic training, observation, and evaluation of such programs should be included.

What is the current level of activities in program development?

_____ Man-days per year — Accuracy of estimate _____ %
_____ Dollar expenditures — Accuracy of estimate _____ %

What is the current level of staff involvement in program development? (Include estimates of both preservice and inservice activities for staff teachers, and school personnel).

_____ Man-days per year — Accuracy of estimate _____ %
_____ Dollar expenditures — Accuracy of estimate _____ %

What is the current level of activities in communicating program development to the public?

_____ Man-days per year — Accuracy of estimate _____ %
_____ Dollar expenditures — Accuracy of estimate _____ %

What is the current level of activity in preparing reports of program development?

_____ Man-days per year — Accuracy of estimate _____ %
_____ Dollar expenditures — Accuracy of estimate _____ %

It can be seen that the respondents were given specific sections of Article 77, Section 28A, of the Annotated Code of Maryland (i.e., the Educational Accountability Act) which provided general definitions of the accountability law. The wording in the law is general in nature and allows the MSDE considerable discretion as to how its requirements should be implemented.

Four broad categories of accountability are mentioned in the questionnaire which was desighed to elicit from the respondents the current costs of developing, communicating, and reporting the school system's:

1. Goal statements
2. Educational objectives
3. Assessed status of students' performance, competency, and achievement levels
4. Educational program development

In addition the accountability coordinators were asked to estimate the accuracy of the figures which they reported.

Survey Materials

A packet of materials sent to each school system included the questionnaire as well as cover letters from the Maryland State Superintendent of Schools.[1] No specific information (other than that provided in the actual questionnaire) or directions on how to complete the questionnaire were provided to the accountability coordinator. Only *ex post facto* did a MSDE state representative discuss the nature and purposes of the survey with each accountability coordinator.

Observations

The staffs of the Maryland State Department of Education and the Bureau of Educational Research and Field Services made the following observations concerning responses to the survey questionnaire.

1. Some cost items were omitted completely by respondents
2. Costs for two or more accountability components or sub-components were combined by some respondents
3. Educational cost parameters relating to needs assessment costs, program evaluation, and educational support activities were, in many instances, either in the process of being compiled or were nonexistent

In retrospect the former project director should have held a preliminary conference in which all state school system accountability coordinators participated. Such a conference should have been used to explain the study's intent in detail. Also, the construction of the questionnaire itself could have benefited positively from suggestions the local coordinators might have offered. Since the questionnaire never was pretested, a limited amount of usable information resulted. Incomplete responses and total omissions might have been avoided if additional time and effort had been devoted to developing a more comprehensive survey instrument. This was the status of the project at the time BERFS was given the responsibility for writing a final report.

The information collected was based on the best estimates of costs by the school systems' accountability coordinators during the 1970-71 year. No attempt is made here to project these components. The results presented are analyzed by grouping school systems by their enrollment size and by grouping counties by measures of their economic position.

[1] Letters to the superintendents of schools and to accountability coordinators are found in Appendix A.

CHAPTER III
ANALYSIS OF THE DATA

General Procedures

The four accountability components outlined in the Maryland Educational Accountability Act are used as the basis for analysis of the exploratory survey data. The components, as noted in Chapter I, are (1) educational goal development and implementation; (2) objective development and implementation;[1] (3) status surveying of student performance;[2] and (4) instructional program development. The local educational agencies (LEAs) or school systems are divided into categories, first, on the basis of student enrollment, and secondly, according to the median 1969 family income levels Since it is recognized that economies of scale may exist in educational institutions, the differentiating of school systems on the basis of student population is a logical choice.[3] The enrollment intervals selected are for student bodies under 10,000; 10,000 to 50,000; and over 50,000. These enrollment intervals will be referred to as *small, medium,* and *large* school systems.

The second arrangement of school systems according to median family income is accomplished because of the recognized high degree of collinearity between an area's wealth and its total educational expenditures. Similarly, the expenditures on the identified accountability components also should be highly correlated with the area's wealth. Thus the educational expectations that different income levels have should be evidenced in the expenditures made by the local school system.

Finally, it is important to note once again that the data presented in the following tables represent the *best estimates* that school system officials could provide at the time they were queried. Recognition also must be given to the inadequacies of the questionnaire itself and to the lack of response consistency due to insufficient preparation and training of the local accountability coordinators.

School System Size

Responses to the survey questionnaire were received from seven Maryland school systems having less than 10,000 students; eight in the 10,000 to 50,000 student interval; and five in the over 50,000 student interval.[4] The data obtained for each of these size intervals will be discussed sequentially.

Small-Sized School Systems

The average enrollment during the 1970-71 school year in these small school systems was 5,365 students. Table 3.1 presents the estimated costs which the accountability coordinators reported for the goal development and implementation component.

(It should be noted that the average for Tables 3.1 through 3.9 are computed based upon the systems reporting *only*. When the average shown in Tables 3.1 through 3.9 are reproduced in summary form in Table 3.15, the averages are computed for *both* reporting and nonreporting school districts.)

---

[1] An elaboration of the general nature of the goal and objective accountability components is found in Appendix B.

[2] A description of the status of surveying accountability component of this report can be found in Appendix C.

[3] It is generally accepted that an inverse relationship exists between the per-pupil costs for administration functions and the size of the school system, at least until diseconomies set in. Little empirical work has been attempted to determine the optimum efficient size. However, the demise of single-teacher schools presents pragmatic evidence that the scale economies do exist. It should be noted that the school systems in the state of Maryland coincide with the 23 counties and one city and therefore do not represent an attempt by the Maryland State Department of Education to define optimal local educational agencies. Although the MSDE refers to these as school systems, hereafter in this monograph the phrase "school district" will be used interchangeably with "school system."

[4] The four county school districts which did not respond fall in the small - and medium-sized categories. These school systems and their enrollments are: Caroline (5,346); Garrett (5,707); Wicomico (14,468); and Frederick (20,928).

TABLE 3.1

Estimated Goal Development and Implementation Costs
(School System Enrollment: less than 10,000 students)

School System	1971 Enrollment	Establish Goal Statements	Communicate to Staff	Communicate to Public	Prepare Reports of Program Development	Total Dollar Cost	Per-Pupil Costs
Kent	3,926	$2,400	$ 2,700	NR	NR	$ 5,100	$1.30
Somerset	4,629	5,512	NR	NR	NR	5,512	1.19
Queen Anne's	4,771	6,500	1,710	NR	$200	8,410	1.76
Talbot	5,038	6,000	700	NR	NR	6,700	1.33
Calvert	6,467	4,567	12,000	$957	366	17,890	2.92
Dorchester	6,467	9,735	NR	NR	NR	9,735	1.51
Worcester	6,607	5,730	NR	NR	180	5,910	.89
Average*	5,365	$5,778	$ 4,278	$957	$249	$ 8,465	$1.58

NR - not reported
*Average is of those systems reporting

The areas with small enrollments are agrarian, rural regions, all situated on the Eastern Shore of Maryland except Calvert County which is in southern Maryland.

It also should be noted that many of the accountability coordinators failed to distinguish between the estimated costs for goals and objectives. In such instances the dilemma was resolved by equally distributing the costs between the two accountability components. This arbitrary division was imposed on the data received from the Kent school system where the estimated cost of communicating goals and objectives to the staff was $5,400 (see Table 3.1 and 3.2). Some of the small LEAs, such as the Talbot school system, did attempt to estimate the figures separately.

TABLE 3.2

Estimated Objective Development and Implementation Costs
(School System Enrollment: less than 10,000 students)

School System	1971 Enrollment	Establish Objective Statements	Communicate to Staff	Communicate to Public	Prepare Reports to Program Development	Total Dollar Cost	Per-Pupil Costs
Kent	3,926	$2,400	$ 2,700	NR	NR	$ 5,100	$1.30
Somerset	4,629	5,512	NR	NR	NR	5,512	1.19
Queen Anne's	4,771	6,500	1,710	NR	$200	8,410	1.76
Talbot	5,038	7,800	7,800	NR	NR	15,600	3.10
Calvert	6,117	4,567	12,000	$957	366	17,890	2.92
Dorchester	6,467	9,735	NR	NR	NR	9,735	1.51
Worcester	6,607	5,730	NR	NR	180	5,910	.89
Average*	5,365	$6,035	$6,053	$957	$249	$ 9,737	$1.81

NR - not reported
*Average is of those systems reporting

The per-pupil expenditures presented in the tables must be interpreted carefully, and inferences based on the individual component values are suspect.

For the small LEAs, the average estimated per-pupil expenditures in the goals and objectives categories are $1.58 and $1.81, respectively. Naturally it should be realized that the costs of these components are more difficult to measure than is the status surveying component. The latter component can be tied directly to purchasing of test materials, along with administering the tests and grading them.

Table 3.3 shows the projected estimates for the status survey component that three small LEAs submitted in response to the survey questionnaire.

TABLE 3.3

Projected Status Surveying Costs
(School System Enrollment: less than 10,000 students)

		1972-73 Status Survey:					
School System	1971 Enrollment	Establish Status Surveying	Communicate to Staff	Communicate to Public	Prepare Reports of Program Development	Total Cost	Per-Pupil Cost
Talbot	5,038	$11,750	$3,225	$7,250	$ 350	$22,575	$4.48
Calvert	6,117	NR	9,750	NR	1,740	11,490	1.88
Worcester	6,607	9,540	9,540	NR	NR	19,080	2.89
Average*	5,921	$10,645	$7,505	$7,250	$1,045	$17,715	$2.99

NR - not reported
*Average is of those systems reporting

In comparison to the figures already presented, it can be seen that the estimated costs reported for the goal and objective development and implementation components are much lower than for the more tangible status surveying element. Since many more judgmental decisions must be made in determining the time and effort expended on developing goals and objectives, this discrepancy is not too surprising. It does indicate, however, that substantial preparation should be required prior to administering this type of questionnaire so that more uniformity and completeness in reporting may be obtained.

Medium-Sized School Systems

The medium-sized school systems in the exploratory survey also are located in predominantly rural areas of the state of Maryland. Two of these areas are urban tier counties adjacent to the Baltimore and Washington Standard Metropolitan Statistical Areas (SMSA); consequently, they are experiencing extremely rapid rates of population growth. These two counties are Howard and Harford.[5] The school systems in the medium-sized category appear better able to estimate the costs of the various components of goal development and implementation, at least as judged by the increased consistency in responses when viewed against responses from small-sized systems.

Table 3.4 shows that the average estimated cost of the goal development and implementation component for medium-sized school systems in $1.66 per pupil.

[5] The cost information supplied for Howard County may be particularly dated today since the data reported covers a period prior to the establishment of the "new city" of Columbia as a viable entity. Therefore it would be expected that these cost estimates have changed substantially since the survey was administered. A new effort should be launched to get at the component costs with more systematic preparations and controlled circumstances.

TABLE 3.4

Estimated Goal Development and Implementation Costs
(School System Enrollment: between 10,000 & 50,000 students)

School System	1971 Enrollment	Establish Goal Statements	Communicate to Staff	Communicate to Public	Prepare Reports of of Program Development	Dollar Cost	Per-Pupil Costs
St. Mary's	11,856	$10,000	$ 80	$ 80	$ 360	$10,520	$ .89
Cecil	12,378	17,770	6,975	600	270	25,615	2.07
Charles	14,437	10,000	3,250	150	13,000	26,400	1.83
Carroll	17,213	9,000	7,200	3,000	3,000	22,200	1.29
Allegany	17,589	3,000	12,960	6,000	1,350	23,310	1.33
Howard	19,049	6,200	9,600	960	1,500	18,260	.96
Washington	24,053	12,870	5,000	34,900	6,000	58,770	2.44
Harford	31,620	48,000	NR	NR	13,335	61,335	1.94
Average*	18,524	$14,605	$ 6,438	$ 6,527	$ 4,852	$30,801	$1.66

NR - not reported
*Average is of those systems reporting

The range and variance of the estimates is reduced *vis à vis* the first category The average per-pupil expenditure is quite similar to that of the small-sized systems.

With respect to the estimated costs of objective development and implementation, however, the variance for medium-sized LEAs is greater than for small LEAs (see Table 3.5).

TABLE 3.5

Estimated Objective Development and Implementation Costs
(School System Enrollment: between 10,000 & 50,000 students)

School System	1971 Enrollment	Establish Objective Statements	Communicate to Staff	Communicate to Public	Prepare Reports to Program Development	Total Dollar Cost	Per-Pupil Costs
St. Mary's	11,856	$ 9,000	NR	NR	$6,900	$15,900	$1.34
Cecil	12,378	1,770	$ 6,975	$ 600	270	9,615	.78
Charles	14,437	65,000	3,750	3,750	1,500	74,000	5.13
Carroll	17,213	8,000	18,000	1,200	1,200	28,400	1.65
Allegany	17,589	3,000	12,960	6,000	1,350	23,310	1.33
Howard	19,049	4,680	17,400	50	50	22,180	1.16
Washington	24,053	15,732	5,525	3,250	6,825	31,332	1.30
Harford	31,620	57,550	15,000	NR	NR	72,550	2.29
Average*	18,524	$20,592	$11,373	$2,475	$2,585	$34,661	$1.87

NR - not reported
*Average is of those systems reporting

Two possible explanations for this occurance are: (1) some of the estimates are questionable, or (2) the distinction between goals and objectives was not consistently interpreted by the accountability coordinators. In the latter case it is a matter of proper preparation of the questionnaire and the respondents. In the data obtained the estimated per-pupil expenditures for objective development in the Charles County school system seems to be high, if the other area estimates are to be believed.

The projected costs for status surveying also show a high degree of variability for both small- and medium-sized school systems, as can be seen in Table 3.6.[6] This variability may be attributed to the absence of a statewide status surveying program during the survey period (see Appendix C for a discussion of the various testing procedires utilized within Maryland at the time of the survey). Hopefully, once a standardized statewide system of status surveying is implemented, the reliability of the cost data will improve.

TABLE 3.6

Projected Status Surveying Costs
(School System Enrollment: between 10,000 & 50,000 students)

School System	Project Costs: 1971 Enrollment	1972-73 Status Survey: Establish Status Surveying	Communicate to Staff	Communicate to Public	Prepare Reports of Program Development	Total Cost	Per-Pupil Cost
St. Mary's	11,856	$27,000	$ 6,300	NR	NR	$33,300	$2.81
Charles	14,437	52,000	NR	NR	NR	52,000	3.60
Carroll	17,213	48,600	48,600	NR	NR	97,200	5.65
Washington	24,053	9,625	1,105	$300	$2,340	13,370	.56
Harford	31,620	15,000	17,500	NR	500	33,000	1.04
Average*	19,836	$30,445	$18,376	$300	$1,420	$45,774	$2.31

NR - not reported
*Average is of those systems reporting

Large-Sized School Systems

The school systems included in this category serve densely populated, urban and central city areas. The estimated per-pupil development costs in the large-sized school systems are significantly lower than for the two smaller categories. Table 3.7 shows that the average estimated per-pupil costs in the large-sized school systems are $ .40.

The variance in these per-pupil cost estimates is unacceptably large. The nature of the various school systems tends to influence the per-pupil expenditures for each of the accountability components. Baltimore City can be characterized by urban poverty and reflects the general, national decline of central cities; it also spends the least per pupil for goal development, whereas Montgomery County, which is predominantly upper middle class in nature, spends the most on goal development both in absolute and relative terms. The estimated cost of objective development in Table 3.8 shows less variability than for goal development.

[6]With so much cost variability in the data, both within and between the different size school categories, the need for a more uniform method by which accountability costs can be determined by SEAs and LEAs is reinforced. Such a study is far beyond the scope of this effort, but nevertheless should be pursued.

TABLE 3.7

Estimated Goal Development and Implementation Costs
(School System Enrollment: over 50,000 students)

School System	1971 Enrollment	Establish Goal Statements	Communicate to Staff	Communicate to Public	Prepare Reports to Program Development	Total Dollar Cost	Per-Pupil Costs
Anne Arundel	75,452	$ 2,000	$ 300	$1,000	$43,695	$46,995	$.62
Montgomery	126,679	57,000	NR	NR	50,000	107,000	.84
Baltimore	134,136	34,000	1,000	NR	1,035	36,035	.27
Prince George's	162,850	70,000	2,900	1,500	2,000	76,400	.47
Baltimore City	190,735	5,900	2,640	1,820	NR	10,360	.05
Average*	137,970	$33,780	$1,710	$1,440	$24,183	$ 55,358	$.40

NR - not reported
*Average is of those systems reporting

TABLE 3.8

Estimated Objective Development and Implementation Costs
(School System Enrollment: over 50,000 students)

School System	1971 Enrollment	Establish Objective Statements	Communicate to Staff	Communicate to Public	Prepare Reports to Program Development	Total Dollar Costs	Per-Pupil Costs
Anne Arundel	75,452	$ 74,916	$ 74,916	$ 2,000	$35,000	$186,832	$2.48
Montgomery	126,679	15,000	183,000	NR	NR	198,000	1.56
Baltimore	134,136	96,250	96,250	NR	3,000	195,500	1.46
Prince George's	162,850	11,600	15,562	15,562	NR	42,724	.26
Baltimore City	190,735	117,180	117,180	NR	NR	234,360	1.23
Average*	137,970	$ 62,989	$ 97,382	$ 8,781	$19,000	$171,483	$1.24

NR - not reported
*Average is of those reporting

Only the figures for Prince Georges County seem unrepresentatively low. The need and natural inclination for school systems to concentrate attention on short-range aims seems to be evidenced here. The daily needs of school systems are more closely tied to the category of objective development and implementation than to goal development and implementation.

Little can be said concerning the data presented in Table 3.9 which gives the projected cost of status surveying in large school systems.

TABLE 3.9

Estimated Cost for Status Surveying
(School System Enrollment: over 50,000 students)

School System	Project Costs: 1971 Enrollment	1972-73 Status Survey: Establish Status Surveying	Communicate to Staff	Communicate to Public	Prepare Reports of Program Development	Total Cost	Per-Pupil Cost
Anne Arundel	75,452	$32,000	$47,500	$1,400	NR	$80,900	$1.07
Baltimore	134,136	53,000	25,000	1,200	$1,100	80,300	.60
Prince George's	162,850	60,000	10,000	100	500	70,600	.43
Average*	124,146	$48,333	$27,500	$ 900	$ 800	$77,267	$ .62

NR - not reported
*Average is of those systems reporting

The differing testing procedures formerly utilized in each system, as well as the shift by the MSDE to a statewide assessment program using the Iowa Test of Basic Skills (ITBS) and the Cognitive Test of Abilities (CAT), suggest some possible explanation as to the failure of all large school systems to respond to the question.

Income Levels

Since the data to be discussed here has been previously presented and is merely reorganized, it will be given in a single table. Table 3.10 ranks the counties in the state of Maryland according to their median income levels. The three median income levels during 1969 into which the counties are organized are: (1) over $10,000; (2) between $8,000 and $10,000; and (3) under $8,000.

As was discussed previously there is a high correlation between median family income and total per-pupil expenditure, i.e., a strongly positive relationship exists between these variables. A similar relationship would be expected for the various components of accountability, but the data obtained in the survey do not confirm this hypothesis. An alternative possibility is that, since the larger school systems are able to draw upon more system resources than the smaller systems, they may expend less per pupil for accountability functions. For the smaller systems and generally less affluent areas, to institute new procedures may require the addition of staff personnel, whereas the larger systems have a broader base of personnel from which to draw. The final section of this chapter suggests a possible explanation for these discrepancies.

Program Development Funding

The three sources of primary and secondary school financing are local, state, and federal funds. These sources form the basis for the last accountability component identified as program development. In the state of Maryland local sources of revenue provided 58.4% of the school budget. Similarly, state and federal funding provided 32.9% and 8.7%, respectively. Table 3.11 illustrates, by county, the contributions of each of the government sectors to current public school expenses. The federal contribution generally is under 15% of current expenses except in areas such as St. Mary's County which relies on "impacted area aid" because of the location of a large transient military population in that county.

TABLE 3.10

Estimated Per-Pupil Accountability Costs

Income Category	Median Family Income 1969	School Enrollment	Estimated Per-Pupil Accountability Costs				
			Goals	Objectives	Status	Total Component Estimates	Total Per-Pupil Expenditures
High Income (over $10,000)							
Montgomery	$16,708	126,679	$ .84	1.56	N R	$2.40	$1,121
Howard	13,461	19,049	.96	1.16	N R	2.12	843
Prince George's	12,445	162,850	.47	.26	.43	1.16	913
Baltimore	12,072	134,136	.27	1.46	.60	2.33	909
Anne Arundel	11,474	75,452	.62	2.48	1.07	4.17	774
Harford	10,750	31,620	1.94	2.29	1.04	5.27	750
Charles	10,367	14,437	1.83	5.13	3.60	10.56	743
Carroll	10,180	17,213	1.29	1.65	5.65	8.59	697
Middle Income ($8,000-$10,000)							
Frederick	9,547	20,928	N R	N R	N R	N R	797
Cecil	9,004	12,378	2.07	.78	N R	2.85	700
Baltimore City	8,814	190,735	.05	1.23	N R	1.28	846
Wicomico	8,781	14,468	N R	N R	N R	N R	674
Washington	8,778	24,053	2.44	1.30	.56	4.30	806
Calvert	8,739	6,117	2.92	2.92	1.88	7.72	741
St. Mary's	8,266	11,856	.89	1.34	2.81	5.04	716
Queen Anne's	8,209	4,771	1.76	1.76	N R	3.52	714
Talbot	8,059	5,038	1.33	3.10	4.48	8.91	817
Allegany	8,031	17,589	1.33	1.33	N R	2.66	754
Low Income (under $8,000)							
Dorchester	7,701	6,467	1.51	1.51	N R	3.02	764
Kent	7,624	3,926	1.30	1.30	N R	2.60	810
Caroline	7,420	5,346	N R	N R	N R	N R	700
Worcester	7,386	6,607	.89	.89	2.89	4.67	718
Garrett	6,023	5,707	N R	N R	N R	N R	668
Somerset	5,878	4,629	1.19	1.19	N R	2.38	645

U.S. Bureau of the Census, 1972, *1972 County-City Data Book*, U.S. Department of Commerce (Washington, D.C.: U.S. Government Printing Office, 1973), Table 2 - Counties, p. 225, Item 58.

Maryland State Department of Education, *Facts About Maryland Public Education 1971-72, A Statistical Handbook* (Baltimore: Maryland State Department of Education, 1973), pp. 16-17.

NR - Not reported

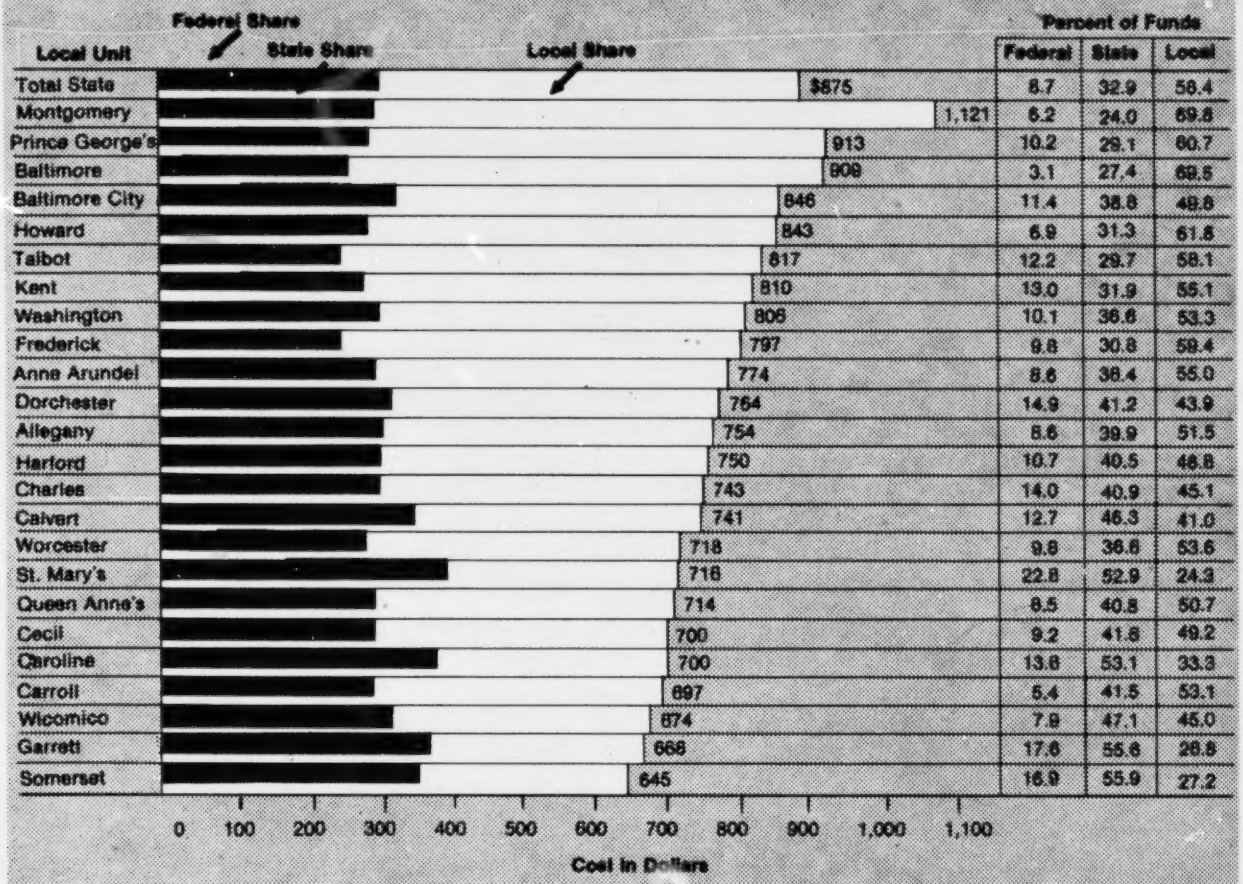
Small-Sized School Systems

Table 3.12 presents the estimated funding sources for the small school systems. It is evident that the federal government sponsors most of the small-sized school systems in terms of program development. This is in direct contrast to the total funding pattern. This federal funding may be viewed as manna by the LEA authorities, and therefore they may be willing to utilize it for fewer programs which provide less immediate and tangible results.

BEST COPY AVAILABLE

TABLE 3.11

Cost Per Pupil Belonging: Current Expenses:* Maryland Public Schools: 1970-71 [a]



Local Unit	Cost	Percent of Funds: Federal	State	Local
Total State	$875	8.7	32.9	58.4
Montgomery	1,121	6.2	24.0	69.8
Prince George's	913	10.2	29.1	60.7
Baltimore	909	3.1	27.4	69.5
Baltimore City	846	11.4	38.8	49.8
Howard	843	6.9	31.3	61.8
Talbot	817	12.2	29.7	58.1
Kent	810	13.0	31.9	55.1
Washington	806	10.1	36.6	53.3
Frederick	797	9.8	30.8	59.4
Anne Arundel	774	8.6	36.4	55.0
Dorchester	764	14.9	41.2	43.9
Allegany	754	8.6	39.9	51.5
Harford	750	10.7	40.5	48.8
Charles	743	14.0	40.9	45.1
Calvert	741	12.7	46.3	41.0
Worcester	718	9.8	36.6	53.6
St. Mary's	716	22.8	52.9	24.3
Queen Anne's	714	8.5	40.8	50.7
Cecil	700	9.2	41.8	49.2
Caroline	700	13.8	53.1	33.3
Carroll	697	5.4	41.5	53.1
Wicomico	674	7.9	47.1	45.0
Garrett	668	17.6	55.6	26.8
Somerset	645	16.9	55.9	27.2

Excludes transportation but includes State Share of Teachers' Retirement and Social Security.

[a] Maryland State Department of Education, *Facts About Maryland Public Education 1971-72, A Statistical Handbook.* (Baltimore: Maryland State Department of Education, 1973), pp. 16-17.

Medium-Sized School Systems

As the size of the school system increases to over 10,000 students, local support for program development also appears to increase. Table 3.13 shows that, proportionately, the local funding contribution increases relative to the federal funding, although in absolute terms, this increase does not appear to be a significant one. It is notable that the average federal per-pupil contribution declined from $44.88 for the under-10,000 student systems to $18.72 for those systems with 10,000 to 50,000 students.

TABLE 3.12

Federal, State, and Local Program Expenditures Per Pupil
(School System Enrollment: less than 10,000)

School System	Per-Pupil Costs				Percent of Funding		
	Federal	State	Local	Total Funds	Federal	State	Local
Kent	$30.06	0	$5.43	$35.49	84.7	0	15.3
Somerset	59.41	0	3.73	63.14	94.1	0	5.9
Queen Anne's	33.12	0	5.87	38.99	84.9	0	15.1
Talbot	32.16	0	0	32.16	100.0	0	0
Calvert	64.57	$3.11	6.54	74.22	87.0	4.2	8.8
Dorchester	46.39	0	1.62	48.01	96.6	0	3.4
Worchester	48.43	7.57	1.55	57.55	84.2	13.1	2.7
Average	$44.88	$1.53	$3.53	$49.94	89.8	3.1	7.1

TABLE 3.13

Federal, State, and Local Program Expenditures Per Pupil

(School System Enrollment: between 10,000 and 50,000)

School System	Per-Pupil Costs				Percent of Funding		
	Federal	State	Local	Total Funds	Federal	State	Local
St. Mary's	$25.30	0	$ 2.97	$28.27	89.5	0	10.5
Cecil	18.66	0	-0	18.66	100.0	0	0
Charles	26.04	0	.64	26.68	97.6	0	2.4
Carroll	11.85	0	11.62	23.47	50.5	0	49.5
Allegany	29.97	0	10.00	39.97	75.0	0	25.0
Howard	9.19	0	3.94	13.13	70.0	0	30.0
Washington	17.67	0	1.03	18.70	94.5	0	5.5
Harford	11.07	0	2.09	13.16	84.1	0	15.9
Average	$18.72	0	$ 4.04	$22.76	82.3	0	17.7

Large-Sized School Systems

The federal per-pupil expenditures appear to continue to decline as the system size increases to over 50,000 students. The single exception is Baltimore City which exhibits a dramatic jump to $56.78 per pupil, as indicated in Table 3.14. This surprising change may be attributed to the fact that Baltimore City is a SMSA central city into which large amounts of federal funding have been poured in an attempt to reverse the continuing decline of core cities. It also appears that the areas receiving the largest proportions of federal funding are those which have been experiencing substantial out-migration over the period of the last two decades, i.e., rural America and the urban core cities. Since both areas are less able to finance any type of public expenditures through local sources, it is only reasonable that transfers of wealth should be attempted by the federal government. From the data obtained in this survey it is not possible, however, to make a definite judgment on the subject.

TABLE 3.14

Federal, State, and Local Program Expenditures Per Pupil

(School System Enrollment: over 50,000)

School System	Per-Pupil Costs				Percent of Funding		
	Federal	State	Local	Total Funds	Federal	State	Local
Anne Arundel	$10.47	0	$5.19	$15.66	66.9	0	33.1
Montgomery	4.97	0	.63	5.60	88.8	0	11.2
Baltimore	6.35	0	.60	6.95	91.4	0	8.6
Prince George's	7.37	0	0-	7.37	100.0	0	0
Baltimore City	56.78	0	1.31	58.09	97.7	0	2.3
Average	$17.19	0	$1.55	$18.74	91.7	0	8.3

Summary of Findings

From the data obtained in the Maryland accountability survey, few substantive conclusions can be drawn. General conclusions and recommendations related to the total study are presented in Chapter IV. However, Table 3.15 does present a concise review of the average estimates obtained. The average data indicate, that, if any scale economies do exist, they occur in school systems with a student enrollment exceeding 50,000. The cost estimates for small- and medium-sized school systems appear quite similar.

An overview of the most salient findings may be obtained by examining the goal and objective cost components. Here it is seen that the small- and medium-sized school systems incur higher per-pupil costs than do the large-sized systems. In the status surveying component the inverse relationship between per-pupil expenditures and system size is apparent. The funding sources for goal and objectives program development also exhibit a similar relationship although, in both instances, the medium-sized districts—while practically equivalent to small district expenditures—were slightly higher in their per-pupil costs.

Thus it appears that the fixed costs involved in all of these four components are high, and therefore the larger school systems are better able to absorb them by distributing them across the larger student population. However, any generalization about these particular survey data should be left to another time when more complete educational components cost data have been collected. The basic conclusion reached in this survey is that smaller school systems will require additional financial aid and technical assistance in establishing a comprehensive accountability program. This is something legislators and lawmakers should keep in mind when instituting accountability requirements since the small school systems generally are the least affluent and therefore are least able to finance the program costs internally.

TABLE 3.15

Summary of Cost Estimates

LEA Size Category	Mean Enrollment	Mean Cost Levels					
		Establish Statements	Communicate to Staff	Communicate to Public	Prepare Reports	Total	Mean Per-Pupil Cost
Goal Development and Implementation							
Small	5,365	$5,778	$2,444	$ 137	$ 107	$ 8,466	$1.58
Medium	18,524	14,605	5,833	5,711	4,852	30,801	1.66
Large	137,970	33,780	1,368	864	19,346	55,358	.40
Objective Development and Implementation							
Small	5,365	6,035	3,459	137	107	9,738	1.82
Medium	18,524	20,592	9,951	1,856	2,262	34,661	1.87
Large	137,970	62,989	97,382	3,512	7,600	171,483	1.24
Status Surveying							
Small	5,921	7,097	7,505	2,417	697	17,716	2.99
Medium	19,836	30,445	14,701	60	568	45,774	2.31
Large	124,146	48,333	27,500	900	533	72,266	.62

Sources of Funding for Program Expenditures	Mean Funding by Source (Per Pupil)				Percent of Funds		
	Federal	State	Local	Total	Federal	State	Local
Small	$44.88	$1.53	$3.53	$49.94	89.8	3.1	7.1
Medium	18.72	0	4.04	22.76	82.3	0	17.7
Large	17.19	0	1.55	18.74	91.7	0	8.3

CHAPTER IV
CONCLUSIONS AND RECOMMENDATIONS

Exploratory Study Conclusions

As in any exploratory study such as this one, the questions raised by the project tend to exceed in number those answered. Also, the tendency for preliminary analyses to provide obvious and self-evident conclusions has been confirmed. However, substantial insight has been provided by the research, particularly into some of the pragmatic problems inherent in attempting to quantify previously unmeasured phenomena. The need to specify and define more completely the program components which are to be measured is inescapable. Failure to do so leads to inconsistent responses. In addition, the sample units selected are not homogeneous. For both of these reasons, the data obtained are not really comparable among school systems. The Maryland Accountability Act makes a preliminary attempt to define overall goals in broad program areas. However, the defined areas of concern (goal, objective, status surveying, and program development) are vague and need to be made more explicit and concrete. Also, the sampling procedure of selecting a local accountability coordinator inevitably leads to biased responses. Such bias is not concious in nature and must be eliminated whenever possible. In addition, when special interest groups are involved and the questions asked of them are vague, the results obtained necessarily will be questionable and inconsistent. Such problems can be remedied only by defining more carefully the accountability components, redesigning the sampling procedures, and utilizing a systems analysis approach in future research of this nature.

Long-Term Goals

The desire to apply systems analysis techniques to evaluating public educational institutions cannot be realized immediately; the changes required to implement an Educational Components Cost of Accountability Program (ECCAP) are both philosophical and pragmatic. Therefore, such changes require a gestation period in order to assure the proper nurturing and development of the concepts. Otherwise, the attempts will be abortive and of little use to SEA-LEA educational systems.

Defining Accountability Components

All accountability components must be defined in specific and concrete terms. This entails specifying programs and defining their desired objectives. The life-cycle costing of these programs involves assigning dollar values to each of the developmental stages through which any program progresses from establishment to implemention to evaluation. The purpose of an educational components cost of accountability program is to develop a *consistent procedure* against which alternatives can be evaluated.

An example of how the accountability process might be envisioned could be *evaluating the creation of a new curriculum* such as one to improve the reading abilities of primary school children. The overall goal in this instance would be to increase the literacy of the school children.

(Goals such as this one are determined through the work and cooperation of many groups in society.[1] Societal goals are broad in nature and, therefore, a statement of goals frequently does not specify how the desired ends are to be achieved. Thus goals may be merely a statement of the desired consequences.)

While the overall goal in our cited example is increased literacy of primary school children, the definition of more specific objectives is required. These objectives are used to evaluate the success in achieving the specified ends. The resposibility for specifying objectives rests primarily on the shoulders of professional educators. One specific objective in the case of increasing literacy might be determining a minimum desired improvement in the number of words read per minute at some pre-

[1] Here "society" is used in its general sense to include parents, professional educators, legislative and governmental bodies.

determined level of comprehension. Given a set of quite specific objectives—such as the one just suggested—a program then may be developed and implemented to achieve the specified objectives. Finally, the success of the endeavor should be evaluated, probably through the use of some standardized testing or criterion-referenced testing program. This might entail purchasing standardized testing materials (e.g., Iowa Test of Basic Skills or Cognitive Abilities Test) on a statewide basis, or the development, construction, and validation of appropriate criterion-referenced materials.

One aspect of accountability seeks to assign a consistent measure—the dollar—to the cost of implementing any given program. Obviously the costs associated with *each phase* of the program must be estimated. The intent here is not to determine the efficiency of the program, *per se*, but rather its efficacy in terms of alternatives which may be available for achieving the desired objective(s). In fact, the efficient operation of a program is a distinctly different question. In order to compare alternatives it is necessary to calculate the costs of each entire program from its inception through its development, implementation, and evaluation.

Thus the costs of determining societal goals, specifying actual objectives, developing particular programs, and evaluating results all must be included in the accountability calculation. In dealing with a manufacturing process, such procedures are much more concrete, and the measures more readily available. In education it is recognized that goals and objectives are much more amorphous. And yet educational goals *can* be specified, and every attempt must be made to do so.

Determining Component Costs

In order to achieve accountability it is requisite for the educational evaluator to understand his present position. This requires a comprehensive study to define currently existing educational programs and to determine the costs associated with each one. Such an analysis requires the selection of the appropriate units to be analyzed. The sample groups used in the study reported in this monograph are not homogeneous in any respect, except that each observation represents a single school system. The diversity among the systems is quite complex and vast. It must be recognized that school systems themselves are not homogeneous and that comparisons among school systems will not yield much insight into the alternative means of achieving quite diverse goals.

Any accountability surveying, therefore, must be stratified according to inherent similarities of individual schools or classrooms. Sample data should be collected among the school systems by grade, department-content area, and school type. The actual sampling should be accomplished in the classroom, by an outside observer, with the cooperation of the teacher, department chairpersons, and principal. Problems of such a study are apparent. The individual teacher may view the surveyor not as an impartial observer but as a personal evaluator. Teachers' organizations also may view such a survey as an attempt to impose new rules and controls on teachers. It is mandatory that an observer be a disinterested party whose findings will be analyzed only in aggregate terms. In addition it is the responsibility of the school system to assure all parties that the survey results will not be used to reward or punish individual teachers or schools. Only by gaining the cooperation and active assistance of the local educators and their representative organizations can any usable system of accountability be introduced.

Once this cooperation has been obtained some of the variables which are relevant in assuring the comparability of data are grade level, student achievement, department-content, socioeconomic setting, teacher salaries, education and experience level of staff, and school type. It also is imperative that observers be well and consistently trained so that measurement errors can be reduced to a minimum. A representative sample might involve five percent of the schools or approximately 65 public schools in the state of Maryland, on all grade levels. Obviously such an analysis is an undertaking of large magnitude. In the interim it is necessary to extend the preliminary work begun by this exploratory project which was a step in the right direction, albeit a small one.

Short-Term Objectives

Future analyses should build upon this exploratory study with the recognition that developing a

usable educational components cost of accountability system will require much additional work. With this in mind the following steps must be considered:

1. Review existing accountability laws
2. Determine the goals of a particular educational system
3. Specify objectives and develop appropriate programs
4. Specify the status survey requirements of student performance
5. Estimate the costs of the various components

The first three steps must be accomplished by the state education agency in concert with its local education agencies. Assistance may be given for determining the costs associated with the goals, objectives, and program development. A handbook should be developed to help school systems implement educational components cost of accountability programs. Efforts in this direction already are underway in the Maryland State Department of Education. MSDE checklists provide a framework which other SEAs and LEAs may use in their own endeavors to devise educational components cost of accountability programs within their own states.

Recommended Checklists for ECCAP Activities

After completing this Maryland exploratory study of an Educational Components Cost of Accountability Program, a series of checklists[2] was constructed to provide guidelines for SEA and LEA officials. Three checklists specify the planning, implementation, and evaluation activities required for an ECCAP. Hopefully, these checklists will serve as a framework for future cost-pricing studies.

Checklist 1 illustrates the planning tasks that SEA-LEA personnel should consider in the development of an Educational Components Cost of Accountability Program. In general it specifies those planning tasks needed to answer the questions related to how decision makers should design an ECCAP. The major tasks include: (1) gaining background knowledge of accountability in the state; (2) cost-pricing program objectives and outcomes; and (3) utilizing a systematic approach to the ECCAP problems.

Checklist 2 provides a general framework for the implementation task involved in an Educational Components Cost of Accountability Program. It highlights both organizational and operational considerations that should be addressed when determining what activities are to be pursued to initiate, maintain, and conclude an ECCAP.

Checklist 3 for ECCAP evaluation activities consists of two sections. On the left-hand portion of the checklist is a delineation of planning and implementation tasks already cited in Checklists #1 and #2. On the right-hand portion of the Checklist is a set of evaluation models which could be used in the evaluative aspect of the Educational Components Cost of Accountability Program. The idea behind this approach is for SEA decision makers to delineate as many evaluation models as necessary and adapt or combine components of these models which would meet the evaluative needs of the ECCAP in a given state. Having such models to choose from places one in the inevitable position of being eclectic (i.e., choosing those areas applicable to the accountability costs from already-established evaluation models to best meet the needs of the situation.) The main objective is to take the most rational and logical method to systematically evaluate the ECCAP.

This third Checklist can be utilized by the SEAs and LEAs in applying one of the existing models to evaluating their educational systems. In addition it presents a concise, uniform framework with which to categorize any new evaluation model which may be developed. The Checklist also may serve to facilitate the development of new evaluation models by providing the model builder some of the important elements which must be considered in developing an accountability model.

Recommendations

It is recommended that the next necessary step in developing an operational Educational

[2] Checklists for ECCAP activities are found in Appendix D.

Components Cost of Accountability Program is the preparation of a handbook based on the checklists presented or upon some similar guidelines. Such a handbook would be intended to be used by the SEAs and LEAs to assist them in the planning, designing, implementing, evaluating, and costing of a comprehensive accountability program. The handbook itself would review appropriate systems analysis techniques and apply them to educational components cost of accountability for educational institutions.

The exploratory survey conducted as the basis for this monograph may be used in the development of a handbook. Problems encountered with respect to the creation of appropriate survey instruments must be considered and corrected. The categorization and classification of the surveyed units must be made a function of the goals, objectives, and programs as they are defined by the SEAs and LEAs rather than merely using school systems as the minimum-sized sample unit.

This exploratory study has not provided a definitive statement with regard to the costs of public educational accountability. Rather, the study was conceived and undertaken in an attempt to establish a solid foundation of costs associated with the implementation of accountability systems. The problems encountered in this study should serve to strengthen future projects which will be better able to avoid similar pitfalls.

The recommended follow-up activities of the project are ambitious and will require much additional work, both on the theoretical and applied levels. Since accountability is such a relatively new concept with respect to public school systems, the need for additional work was anticipated. Eventual benefits should, however, fully justify the developmental efforts and costs which will be incurred.

APPENDIXES

APPENDIX A

LETTERS OF INTRODUCTION TO THE MARYLAND STATE DEPARTMENT ACCOUNTABILITY COMPONENT COST STUDY

JAMES A. SENSENBAUGH
STATE SUPERINTENDENT

MARYLAND STATE DEPARTMENT OF EDUCATION
P.O. BOX 8717
FRIENDSHIP INTERNATIONAL AIRPORT
BALTIMORE, MARYLAND 21240

May 21, 1973

To the Superintendent of Schools:

The attached letter and interview guide are being sent to the Accountability Coordinator for your school system. Dr. Griffith will be arranging an interview with this individual in the near future.

Thank you for your continuing cooperation.

Sincerely yours,

James A. Sensenbaugh

JAMES A. SENSENBAUGH
State Superintendent of Schools

JAS:M:dw

Attachments

JAMES A. SENSENBAUGH
STATE SUPERINTENDENT

MARYLAND STATE DEPARTMENT OF EDUCATION
P.O. BOX 8717
FRIENDSHIP INTERNATIONAL AIRPORT
BALTIMORE, MARYLAND 21240

May 21, 1973

To the Accountability Coordinator:

Under the auspices of the Cooperative Interstate Project for SEA-LEA Accountability, the Maryland State Department of Education is conducting a study of the component costs of educational accountability implementation. Since the area is new and, therefore, undefined, a single form would be inadequate to assess the activities of the various school systems. Accordingly, a structured interview will be conducted based on the enclosed questionnaire.

The questionnaire is merely a guideline for obtaining information about various accountability activities. It is being sent to you prior to the interview so that you may have an opportunity to consult with co-workers and obtain data that may not be at your immediate disposal. In reading each question, keep in mind personnel and cost figures at the level of involvement in the defined areas of your school system.

We realize that many of your responses will involve approximations of your school system's involvement; we are also interested in obtaining measures of this dimension of accountability. Estimates of the accuracy of your estimated commitments to each activity will be requested.

Dr. William Griffith and his assistants will be contacting you shortly to schedule an interview. If you have any questions in the interim, please feel free to call Dr. McIntyre at 796-8300, extension 208, or Dr. Griffith on extension 326.

Sincerely yours,

James A. Sensenbaugh

JAMES A. SENSENBAUGH
State Superintendent of Schools

JAS:G:dw
Enclosure

APPENDIX B

SUPPLEMENTARY REPORT TO ACCOUNTABILITY COMPONENT #1 and #2

Goal and Objective Development and Implementation

MSDE Priority Accountability Subject Areas of Concentration

Chapter I, Section D, of the Maryland State Department of Education Handbook (1973-74) on the Accountability Assessment Program presents an accurate statement of its priority accountability subject areas of concentration. It states:

> In response to the accountability legislation enacted by the Maryland State Legislature and in accord with the six characteristics formulated for the States' Accountability Program, the Maryland State Board of Education determined that the initial efforts of accountability should concentrate on the basic learning skills of **reading, writing,** and **mathematics.** Following the specification of desired educational goals in each of these three areas, an accountability system should measure student achievement relative to each goal and then prepare an analysis of achievement results related to other variables, such as intelligence and socioeconomic status.

MSDE Statewide Goals in Reading, Writing and Mathematics

In June, 1973, a statement about statewide goals in reading, writing, and mathematics for students in the public school system was published by MSDE. The following goals were identified:

1. **Goals in Reading.** Each Maryland student who has achieved the objectives for Reading established by the local school should:

   a. Utilize a variety of reading materials
   b. Use a word recognition system
   c. Comprehend various reading materials
   d. Meet the reading demands for functioning in society
   e. Select reading as a personal activity

2. **Goals in Writing.** Each Maryland student who has achieved the objectives for Writing established by the local schools should:

   a. Use the writing process to communicate personal feelings and ideas, observing accepted conventions of writing
   b. Use the writing process to respond to the demands and obligations of society, observing accepted conventions in writing
   c. Value writing for personal and social reasons

3. **Goals in Mathematics.** Each Maryland student who has achieved the objectives for Mathematics established by the local school should:

   a. Recall and/or recognize mathematical definitions, facts, and symbols
   b. Perform mathematical manipulations
   c. Understand mathematical concepts and processes
   d. Solve specific mathematical problems
   e. Use mathematical reasoning and processes to meet personal and societal needs
   f. Appreciate and use mathematics

Having identified both the MSDE priority areas and their goals, we now can examine the results of the supplementary data collected for this study as it reflects the emphasis of these three priority areas during the 1972-73 academic school year. It should be noted prior to the analysis of this data that the Maryland State Department of Education and the local educational agencies, because of the mandates of the Educational Accountability Act, are in a period of transition with regard to accountability and that the findings are likely to reflect this condition.

LEA Responses to Major Subject Areas of Concentration for 1972-1973 and the Accountability Components

Having already identified the MSDE priority accountability subject areas of concentration, the present investigation sought answers to the question, "What are the major subject areas of concentration most directly involved in each of the accountability components as cost estimates for development and implementation were made for the 1972-1973 academic school year?"

The subject areas of concentration identified in this study are reading, language arts, mathematics, science, social studies, vocational education, community service, and communications. Respondents were asked in the questionnaire to identify those subject areas of concentration they felt absorbed most of the funds related to the accountability components. In the next section, the results from the data collected on LEA Perspective on Priority Subject Areas of Concentration are presented.

Results

Tables B.1 through B.3 show accountability subject areas of concentration fostered by small-, medium-, and large-sized school systems. The rows labeled "Total" provide a numerical breakdown of particular subject area(s) of concentration checked as most directly related to costs for the accountability components development and implementation.

For small-sized school systems (Table B.1), the subject areas of concentration identified, from highest to lowest frequency, were: (1) reading; (2) vocational education and community services; (3) mathematics and communications; and (4) language arts, social studies, and science.

TABLE B.1

Projected Major Subject Areas of Concentration for 1972-1973 Associated with Accountability

Component #2 - Objective Development and Implementation
(School System Enrollment: less than 10,000 students)

School System	Small Size Enrollment	Area of Concentration: Reading	Language Arts	Math	Science	Social Sutdies	Vocational Education	Community Service	Communications
Kent	3,926	x	x	x	-	-	x	-	x
Somerset	4,629	x	-	-	-	-	x	x	-
Queen Anne's	4,771	x	-	x	x	-	-	-	-
Talbot	5,038	x	-	-	-	-	x	-	-
Calvert	6,117	x	-	-	-	-	-	x	-
Dorchester	6,467	x	-	-	-	-	-	x	-
Worcester	6,607	x	-	-	-	x	x	x	x
	Total	7	1	2	1	1	4	4	2

For the medium-sized school systems (Table B.2), the subject areas of concentration identified, from highest to lowest frequency, were: (1) reading; (2) vocational education; (3) mathematics; (4) language arts; (5) community services; (6) social studies; (7) science; and (8) communication.

TABLE B.2

Projected Major Subject Areas of Concentration for 1972-1973 Associated with Accountability

Component #2 - Objective Development and Implementation
(School System Enrollment: between 10,000 & 50,000 students)

School System	Medium Size Enrollment	Area of Concentration: Reading	Language Arts	Math	Science	Social Sutdies	Vocational Education	Community Service	Communications
St. Mary's	11,856	x	-	-	-	-	x	-	-
Cecil	12,378	x	-	x	-	-	-	-	-
Charles	14,437	x	-	-	-	-	x	x	-
Carroll	17,213	x	x	x	-	-	-	-	-
Allegany	17,589	x	x	x	-	x	x	-	-
Howard	19,049	x	x	x	-	-	-	-	-
Washington	24,053	x	x	-	-	x	x	x	x
Harford	31,620	x	x	x	x	-	x	x	-
	Total	8	5	5	1	2	5	3	1

In the large-sized school systems (Table B.3), the subject areas of concentration identified, from highest to lowest frequency, were: (1) reading; (2) language arts, social studies, vocational education, and science; (3) mathematics; and (4) community services.

TABLE B.3

Projected Major Subject Areas of Concentration for 1972-1973 Associated with Accountability

Component #2 - Objective Development and Implementation
(School System Enrollment: over 50,000 students)

School System	Large Size Enrollment	Area of Concentration: Reading	Language Arts	Math	Science	Social Sutdies	Vocational Education	Community Service	Communications
Anne Arundel	75,452	x	-	x	x	x	x	-	-
Montgomery	126,679	x	x	-	x	-	-	-	-
Baltimore	134,136	x	x	-	x	x	x	-	-
Prince George's	162,850	x	x	x	-	x	-	-	-
Baltimore City	190,735	x	-	-	-	-	x	x	-
	Total	5	3	2	3	3	3	1	-
	Total-Total	20	9	9	4	7	12	8	2

An examination of the row labeled "Total-Total" in Table B.3 shows that the most frequently checked subject areas of concentration for the combined small-, medium-, and large-sized school systems were reading and vocational education, followed in order by language arts and mathematics, community services, and social studies. The least frequently checked subject areas were science and communications. This information shows that, for reading, the subject areas of concentration and present practices are in agreement. For mathematics, the level of agreement also is high. For writing, the situation is not as clear. If writing is equivalent to language arts, the agreement is high; if it is equivalent to communication skills, it is low. If writing means demonstrating actual skill, then neither the tests presently being used, nor the proposed one, measure this ability except in a secondary way (see Appendix C, Supplementary Report to Accountability Component Costs #3 - Status Surveying, for clarification of this point). On the writing factor, teacher judgment might be used effectively.

Vocational education was identified as second by the small-, medium-, and large-sized school systems but has not been selected as a priority subject area of concentration by the Maryland State Departmant of Education.

Sample Work Sheets

In order to provide guidelines for establishing the costs associated with accountability components Goal and Objective Development and Implementation, sample work sheets have been provided on pages 39, 40, and 46. Such work sheets can be adjusted and used at the state and/or local levels.

BEST COPY AVAILABLE

SAMPLE WORK SHEET 1

for Accountability Component Goal Development and Implementation Costs
at Local and/or State Level

Name of School System _____ Enrollment Size _____ Total Budget _____

Name of School _____ Enrollment Size _____ Grade _____ Total Budget _____

General Subject Area of Concentration	Subj. Elements	No. of Goals/ Subj. Elements	No. of Administrators	No. of Man Days	Cost/ Day	No. of Central Office Staff	No. of Man Days	Cost/ Day	No. of School Staff	No. of Man Days	Cost/ Day	Tot. No. all Persons	Tot. No. Man Days	Tot. Cost	Per Pupil Costs
TOTAL															

BEST COPY AVAILABLE

SAMPLE WORK SHEET 2

for Accountability Component Goal Development and Implementation Costs
at Local and/or State Level

Name of School System _____ Enrollment Size _____ Total Budget _____

Name of School _____ Enrollment Size _____ Grade _____ Total Budget _____

General Subject Area of Concentration	Subj. Eleemts	No. of Obj.. Subj. Eleemts	No. of Administrators	No. of Man Days	Cost/ Day	No. of Central Office Staff	No. of Man Days	Cost/ Day	No. of School Staff	No. of Man Days	Cost/ Day	Tot. No. all Persons	Tot. No. Man Days	Tot. Cost	Per Pupil Costs
TOTAL															

APPENDIX C

A SUPPLEMENTARY REPORT TO ACCOUNTABILITY COMPONENT COSTS #3 -

Status Surveying

This supplementary report identifies some of the underlying dimensions in the Accountability Component Costs #3 - Status Surveying. The following items are discussed: (1) the Maryland LEA School Systems Testing Practices for the 1972-73 academic school year; (2) the testing materials, test scoring, and per-pupil costs associated with Component #3 for different size school systems, and (3) the Maryland state plan for implementation of the accountability law. These items indicate a concern for providing the reader with information about testing activities at the state and local level and the costs associated with such activities for small-, medium-, and large-sized school systems.

LEA School Systems Testing Practices (1972-1973)

In Tables C.1 through C.3, 23 of 24 LEA school systems are examined in terms of their testing practices during the 1972-1973 school years.

The school systems again are broken down into small, medium, and large sizes. The examination covers the instruments used to assess student achievement, intelligence, and aptitude. The following tests were identified:

ITBS - Iowa Test of Basic Skills
ITED - Iowa Test of Educational Development
MAT - Metropolitan Achievement Test
TAP - Tests of Academic Progress
STEP - Sequential Tests of Educational Progress
SAT - Stanford Achievement Test Battery
CAT - Cognitive Abilities Test
L-T - Lorge-Thorndike Intelligence Tests
O-L - Otis-Lennon Mental Ability Tests
DAT - Differential Aptitude Tests
GATB - General Aptitude Test Battery

TABLE C.1

Checklist of Achievement, Intelligence and Aptitude Tests Used by School Systems

(School System Enrollment: less than 10,000 students)

Small Size School System	Types of Tests: Achievement						Intelligence			Aptitude	
	ITBS	ITED	MAT	TAP	STEP	SAT	CAT	L-T	O-L	DAT	GATB
Kent	x	x	x	-	-	-	-	x	-	-	-
Somerset	-	-	x	-	-	-	-	-	-	-	-
Queen Anne's	x	x	-	-	-	-	-	-	-	-	-
Talbot	x	-	-	-	-	-	x	-	-	x	-
Calvert	-	-	x	x	-	-	-	-	-	x	-
Dorchester	x	-	-	-	-	x	-	-	-	-	-
Worcester	-	x	x	-	-	-	-	-	-	-	-
Total	4	3	4	1	0	1	1	1	0	2	0

TABLE C.2

Checklist of Achievement, Intelligence and Aptitude Tests Used by School Systems

(School System Enrollment: between 10,000 & 50,000 students)

Medium Size School System	Types of Tests: Achievement						Intelligence			Aptitude	
	ITSB	ITED	MAT	TAP	STEP	SAT	CAT	L-T	O-L	DAT	GATB
St. Mary's	x	-	x	-	-	-	-	-	-	x	-
Cecil	x	-	-	x	-	-	-	x	-	-	-
Charles	x	-	-	x	-	x	x	-	x	x	-
Carroll	x	-	-	-	x	-	-	-	-	-	-
Allegany	x	-	-	x	-	-	x	-	-	-	-
Howard	-	x	x	-	-	-	-	x	-	-	-
Washington	x	x	-	-	-	-	-	x	-	-	-
Harford	-	-	x	-	-	-	-	-	x	x	-
Total	6	2	3	3	1	1	2	3	2	3	0

TABLE C.3

Checklist of Achievement, Intelligence and Aptitude Tests Used by School Systems

(School System Enrollment: over 50,000 students)

Large Size School Systems	Types of Tests: Achievement						Intelligence			Aptitude	
	ITBS	ITED	MAT	TAP	STEP	SAT	CAT	L-T	O-L	DAT	GATB
Anne Arundel	x	-	-	x	-	-	x	-	-	-	x
Montgomery	x	-	-	-	-	-	-	-	x	-	-
Baltimore	x	-	-	-	-	-	-	-	-	-	-
Prince George's	x	-	x	-	-	-	-	-	-	-	-
Baltimore City	x	x	x	-	-	-	-	-	-	-	-
Total	5	1	2	1	0	0	1	0	1	0	1
Total-Total	15	6	9	5	1	2	4	4	3	5	1

In these same tables, note that Maryland does not have a uniform statewide testing program. The number and type of tests used vary among school systems. In brief, Table C.3 provides an overview of the tests used by the Maryland school system. In this Table, the column labeled "Total-Total" shows that 15 of 20 school systems reported the use of the Iowa Tests of Basic Skills (ITBS). This was followed in their respective order by Metropolitan Achievement Test (MAT); the Iowa Test of Educational Development (ITED); the Test of Academic Progress (TAP); the Stanford Achievement Test Battery (SAT); and the Sequential Test of Educational Progress (STEP).

Also in Table C.3, in the column labeled "Intelligence," four of 20 school systems used the Cognitive Ability Test (CAT), and four used the Lorge-Thorndike Intelligence Test (L-T). Three of the 20 school systems used the Otis-Lennon Mental Ability Test (O-L).

Of the two aptitude tests identified, six of 20 schools reported the use of the Differential Aptitude Tests (DAT.) Only one school system reported the use of the General Aptitude Test Battery (GATB).

Testing Materials, Test Scoring, and Per-Pupil Costs Associated With Accountability Component #3 - Status Surveying

This analysis compared the costs of two elements of Accountability Component #3 - Status Surveying, testing materials and test scoring. Per-pupil costs associated with these two elements are identified for small-, medium-, and large-sized school systems.

Small-Sized School System Testing Program Costs

Six of nine small-sized systems provided data for the analysis. Table C.4 presents data on both "Testing Material Costs" and "Test Scoring Costs."

TABLE C.4

Estimated Testing Program Cost for Status Survey Component

(School System Enrollment: less than 10,000 students)

School System	Small Enrollment	Testing Program Costs			Per-Pupil Costs		
		Testing Materials Costs	Test Scoring Costs	Total Budget	Testing Materials	Test Scoring	Total Budget
Kent	3,926	$ 2,500	$2,500	$ 5,000	$ .64	$ .64	$1.27
Talbot	5,038	7,500	3,500	11,000	1.49	.69	2.18
Caroline	5,346	2.000	1,400	3,400	.37	.26	.64
Calvert	6,117	7,580	7,580	15,160	1.24	1.24	2.48
Dorchester	6,467	1,852	1,852	3,704	.29	.29	.57
Worcester	6,607	10,000	2,000	12,000	1.51	. 30	1.82
Average*	5,584	$ 5,239	$3,139	$ 8,377	$ .94	$ .56	$1.50

NR - not reported
*Average is of those systems reporting

Considerable variability is found both between and within the columns of figures. In the column identified as "Total Budget" combined costs for these elements ranged from a low of $3,400 to a high of $15,160. The average cost figure for all six school systems was $8,377.

The variability in costs is accounted for partially by the fact that some small school systems incurred greater cost than others for the purchase of new testing materials for their students, while others who had the testing materials on hand listed their principal expenditure as test scoring.

An examination of the per-pupil cost related to testing materials and test scoring in Table C.4 provides the following results: Per-pupil costs related to the purchase of testing materials tended to be higher in most cases than that of per-pupil costs related to test scoring. The cost related to both the testing materials and test scoring elements was $1.50.

Medium-Sized School Systems

Eight of ten medium-sized school systems which provided data for this analysis are identified in Table C.5. An examination of the "Testing Program Costs" column labeled "Total Budget" shows that costs ranged from $2,700 to $32,470. Total costs for all eight medium-sized school systems amounted to $161,297, with an average of $20,162.

Per-pupil costs in Table C.5 ranged from $ .11 to $2.25, with an average per-pupil cost of $1.09.

TABLE C.5

Estimated Testing Program Cost for Status Survey Component

(School System Enrollment: between 10,000 & 50,000 students)

School System	Small Enrollment	Testing Program Costs: Testing Materials Costs	Testing Program Costs: Test Scoring Costs	Testing Program Costs: Total Budget	Per-Pupil Costs: Testing Materials	Per-Pupil Costs: Test Scoring	Per-Pupil Costs: Total Budget
St. Mary's	11,856	$ 6,000	$ 8,000	$14,000	$ .51	$ .67	$1.18
Cecil	12,378	4,537	4,537	9,074	.37	.37	.73
Charles	14,437	16,235	16,235	32,470	1.12	1.12	2.25
Howard	19,049	11,000	19,000	30,000	.58	1.00	1.57
Carroll	17,213	20,000	6,000	26,000	1.16	.35	1.51
Allegany	17,589	16,794	8,259	25,053	.95	.47	1.42
Washington	24,053	1,350	1,350	2,700	.06	.06	.11
Harford	31,620	11,000	11,000	22,000	.35	.35	.70
Average*	18,524	10,865	9,298	20,162	.59	.50	1.09

*Average is of those systems reporting

Large-Sized School Systems

Four of the five large-sized school systems provided information for analysis. An examination of Table C.6 shows the range of testing program costs reported under the column labeled "Total Budget" ranged from $18,500 to $160,000. The total budget is $262,500, with an average testing program budget of $65,625.

TABLE C.6

Estimated Testing Program Cost for Status Survey Component

(School System Enrollment: over 50,000 students)

School System	Small Enrollment	Testing Program Costs: Testing Materials Costs	Testing Program Costs: Test Scoring Costs	Testing Program Costs: Total Budget	Per-Pupil Costs: Testing Materials	Per-Pupil Costs: Test Scoring	Per-Pupil Costs: Total Budget
Anne Arundel	75,452	$ 7,000	$11,500	$ 18,500	$.09	$.15	$.25
Montgomery	126,679	36,000	14,000	50,000	.28	.11	.39
Baltimore	134,136	17,000	17,000	34,000	.13	.13	.25
Baltimore City	190,735	80,000	80,000	160,000	.42	.42	.84
Average*	131,751	$35,000	$30,625	$ 65,625	$.27	$.23	$.50

*Average is of those systems reporting

An examination of Table C.6 shows that, for the four school systems considered, per-pupil costs ranged from $ .25 to $ .84, with an average per-pupil cost of $ .50.

Summary

Large-sized school systems incur lower per-pupil costs for both test materials and test scoring than either small- or medium-sized school systems. There appears to be an inverse relationship between the size of the school system and per-pupil costs.

MSDE Plan for the Implementation of the Accountability Law

In June of 1973, the State Advisory Council suggested to the State Board of Education three interim recommendations:

1. The use of locally based assessment systems focusing on the degree to which a school is successful in meeting its own goals
2. The use of a statewide testing and reporting program to be developed by the Maryland State Department of Education to measure the attainment of statewide goals
3. The use of Iowa Tests of Basic Skills - 1971 edition, which measures only a portion of the goals, as part of the initial statewide testing program

Later that year the local coordinators, the Advisory Council, and the State Board of Education agreed that all school systems would administer the Iowa Test of Basic Skills (1971 Edition, Form 3) and the Cognitive Ability Test (1971 Edition, Form 1). The testing program is to be coordinated by the Division of Research, Evaluation, and Information Systems of the State Department of Education.

Accountability Assessment Instruments The eight sub-tests of the Iowa Tests of Basic Skills (ITBS) have been selected for use in grades 3, 5, 7, and 9. These sub-tests measure reading, mathematics, and writing. A major reason for selecting the ITBS is that this test is favorably reviewed in the Buros' Mental Measurement Yearbook and is highly rated with regard to content coverage and statistical characteristics by the UCLA's Center for the Study of Evaluation. Also important is the fact that the ITBS can provide criterion-referenced as well as norm-referenced information for instructional program analysis. The Cognitive Abilities Test (CAT) also is used to measure scholastic aptitude. Both the ITBS and CAT are developed and published by the same company (Houghton-Mifflin) and are normed by the same population. As such, the State purchased both tests for the local educational agencies.

Data Collection and Processing The classroom teachers are expected to administer the tests from March 1 to May 15. The local school districts and test publishers are to score the tests for the first year.

Dissemination The State Department of Education plans to prepare state, school system, and school summaries of test results. These summaries will be disseminated to the Governor, Legislature, newspapers, the State Board of Education, school systems, schools, teacher organizations, colleges, and universities. The reports also will be available within the Departmant for use by the general public.

Future

The elements likely to change in the future are funding, areas assessed, tests, and data processing procedures.

Sample Work Sheet

To provide a guideline for establishing the accountability costs associated with Accountability Component Status Surveying, a sample work sheet has been provided. The work sheet can be adjusted to fit both the state and local levels.

SAMPLE WORK SHEET 3

for Accountability Component Status Surveying Costs
at Local and/or State Level

Name of School System _____ Enrollment Size _____ Total Budget _____

Name of School _____ Enrollment Size _____ Grade _____ Total Budget _____

Test Name	Pub.	Form	Type of Test Norm-Criterion	Kind of Test Achv. IQ Apt.	Subtest Areas	Test Materials	Estimate Quantity	Cost/ Unit	No. Ss Taking Test	Per Pupil costs
1.___	___	___	_____	_____	_____	Manuals	___	___		_____
						Booklets	___	___		_____
						Answer Sheets	___	___		_____
						Practice Tests	___	___		_____
						Practice Ans. Sheets	___	___		_____
						Total	___	___	_____	_____
2.___	___	___	_____	_____	_____	Manuals	___	___		_____
						Booklets	___	___		_____
						Answer Sheets	___	___		_____
						Practice Tests	___	___		_____
						Practice Ans. Sheets	___	___		_____
						Total	___	___	_____	_____
3.___	___	___	_____	_____	_____	Manuals	___	___		_____
						Booklets	___	___		_____
						Answer Sheets	___	___		_____
						Practice Tests	___	___		_____
						Practice Ans. Sheets	___	___		_____
						Total	___	___	_____	_____

BEST COPY AVAILABLE

APPENDIX D
CHECKLIST 1 - PLANNING

Educational Components Cost of Accountability Program (ECCAP) Activities

- Review state accountability laws
- Determine the accountability components covered in the state accountability laws
- Determine the cost-pricing problem(s) related to the accountability components
- Determine accountability component cost-pricing objectives and outcomes
- Design an SEA-LEA cost-pricing model that reflects the statewide educational structure and situation
  - Plan a systems approach to the accountability component cost-pricing problem
    - Determine inputs into the system
      - Determine cost-pricing questions and categories
      - Develop accountability component cost instrument prototypes
    - Determine processes involved in the system
      - Determine strategies for pilot testing and refining prototype instruments
        - Specify details related to pilot testing
      - Determine strategies for field testing and further refining instruments on a selected sample of school systems throughout the state
- Construct a plan for implementation of the cost instruments in all school systems of the state
  - Determine the administrative structure at the SEA-LEA levels that will be responsible for implementing the Educational Components Cost of Accountability Program (ECCAP)
    - Construct task analysis of SEA-LEA personnel responsibilities
    - Construct guidelines of responsibility for SEA-LEA officials and support personnel
    - Determine orientation and training procedures for SEA-LEA ECCAP personnel
  - Determine the accounting and reporting system for the accountability component cost information at each school system level considered
    - Determine procedures for a series of checkpoints to determine if cost information has been reported accurately
    - Determine the monitoring activities of SEA-LEA officials
  - Determine strategies for processing cost information
  - Determine data analysis strategies
  - Determine the number of SEA-LEA man hours to implement the project
    - Determine the time schedules for the project
    - Determine general reporting policies to legislators, school systems, and the public
  - Construct a plan for the continuous evaluation of ECCAP
- Determine the products from the system
  - State Level System:

- Identify the total, average, per-pupil, and per-unit cost for the state on the educational goal component
- Identify the total, average, per-pupil, and per-unit cost, as well as the number, of objectives developed and implemented
- Identify the total, average, and per-pupil cost, as well as the number, of test materials purchased for the state on the educational status surveying of student achievement component

- Local School Systems:
  - Identify the total, average, per-pupil, and per-unit cost for the educational goal, objective, and status surveying of student achievement components for each individual school system of the state
    - Identify the total cost of the accountability components at the elementary school level
    - Identify the total cost of the accountability components at the middle school level
    - Identify the total cost of the accountability components at the junior high school level
    - Identify the total cost of the accountability components at the senior high school level
  - Submit report to SEA
  - Submit report to Governor and State Legislators

CHECKLIST 2 - IMPLEMENTATION

Educational Components Cost of Accountability Program (ECCAP) Activities

- Organizing for accountability component cost program implementation
  - Prepare policy statement on management support and participation of SEA-LEA professional staff members
  - Assign organizational responsibilities for the ECCAP implementation and operation
  - Revise ECCAP implementation where necessary
  - Prepare procedures handbook for ECCAP implementation
  - Conduct ECCAP orientation and training of SEA-LEA professional staff members
    - Distribute handbook on ECCAP
    - Provide background and rationale for the Program
    - Preparation for the Program
    - Conditions for the ECCAP
    - System, school, and department responsibilities
  - Prepare SEA-LEA evaluators for implementation (i.e., first year of Program and use outside agents for future evaluators)
- Educational Components Cost of Accountability Program operational considerations
  - System-level ECCAP responsibilities
    - Appoint system ECCAP cost coordinator and alternate (appointment by Superintendent)
    - Procure the accountability cost instruments

- Assign central staff at SEA-LEA levels to the cost program as coordinators, trainers, and supervisors
- Distribute accountability component cost instruments and directions to school principals
- Provide appropriate orientation and training for school ECCAP coordinators and cost administrators
- Carry out a program of supervision to insure that ECCAP guidelines are being followed
- Provide systematic procedures for collection of accountability components cost information
- Prepare and transmit cost results to SEA-LEA

* School-level ECCAP responsibilities
  - Designate ECCAP school coordinator and alternate (appointment by the Principal)
  - Handling, packaging, storing, sending ECCAP materials to local school system central office and on to state educational agency
  - Department chairperson orientation for the ECCAP
  - School-level cost supervision
* Department/Content-area ECCAP responsibilities
  - Become familiar with ECCAP guidelines
  - Participate in appropriate orientation and training activities coordinated by the school and/or system ECCAP cost coordinator
  - Receive, distribute, compute, collect, and return accountability component cost instruments
* Carry out data collection, processing, analyzing, and reporting activities
* Carry out evaluation activities at state and local levels
* Carry out auditing activities at state and local levels

BEST COPY AVAILABLE

CHECKLIST 3 - EVALUATION

Install Educational Components Cost of Accountability Program (ECCAP) into an Evaluation Framework

PROGRAM TASKS	Sample - Evaluation Models				
	Churchman	Coulson & Cogswell	Stufflebeam	Provus	Others
Planning Tasks: • Review accountability laws • Review overall SEA plan to implement laws • Describe systems approach to ECCAP • Construct systems model • Identify ECCAP inputs, process, products • State ECCAP objectives • State resource and cost variables • State ECCAP cost-pricing categories • Review pre-instrumentation to procedures • Review cost-pricing instruments • Goal component • Objective component • Status survey component • Review specification of pilot and field testing instrument • State assumptions, hypotheses about instrument • Target population - elementary, middle (junior), senior high school • Sampling procedures • Construct SEA-LEA administrative structure • Describe SEA-LEA responsibilities • State level • School system level • School level • Department-content area levels	System Objectives System Environment System Resources Systems System Management	Analyses Design Test Imple-ment	Context Inputs Process Product	Design Installation Process Products Costs	

BEST COPY AVAILABLE

CHECKLIST 3 - EVALUATION (Continued)

Install Educational Components Cost of Accountability Program (ECCAP) into an Evaluation Framework

PROGRAM TASKS	Sample - Evaluation Models				
	Churchman	Coulson & Cogswell	Stufflebeam	Provus	Others
• Review orientation and training procedure for SEA-LEA level responsibilities • Describe accounts reporting procedures • Review data collection procedures • Review general reporting policies	System Objectives	Analyses	Context	Design	
• Review time schedules **Implementation Tasks.**	System Environment			Installation	
• Monitor ECCAP program activities • Policy-making meeting at SEA-LEA level • Pilot field testing of instruments • Orientation and training session of SEA-LEA personnel	System Resources	Design	Inputs	Process	
• Site visits and interviews of ECCAP state education structure • State officials • School System coordinators	Systems	Test	Process	Products	
• School coordinators • Department-content area levels personnel	System Management	Imple-ment	Product	Costs	

3000-3K 40121-74

BEST COPY AVAILABLE

C A P PUBLICATIONS

Report Number

1 *Annotated Bibliography of the State Educational Accountability Repository.* Phyllis Hawthorne. Revised April 1974. Wisconsin.

2 *Legislation by the States: Accountability and Assessment in Education.* Phyllis Hawthorne. Revised August 1974. Wisconsin.

4 *State Goals for Elementary and Secondary Education.* Susan Ketchum Ribble. Revised September 1973. Wisconsin. ERIC ED 083747.

5 *Characteristics of and Proposed Models for State Accountability Legislation.* Phyllis Hawthorne and Archie A. Buchmiller. April 1973. Wisconsin. ERIC ED 078 514

6 *Accountability: A Bibliography.* Gordon P. Hanson. July 1973. Wisconsin. ERIC ED 084630.

20 *Keeping the Public Informed: Accent on Accountability.* A digest of the Michigan dissemination model. Erwin P. Bettinghaus and Gerald R. Miller. 1973. Michigan.

21 *A Dissemination System for State Accountability Programs.* Erwin P. Bettinghaus and Gerald R. Miller. June 1973. Michigan.

22 *Developing a Large Scale Assessment Program.* Frank B. Womer. July 1973. Minnesota.

23 *Indicators and Statewide Assessment.* March 1974. Oregon.

24 *Roles of the Participants in Educational Accountability.* Carl E. Wilsey and Glenn B. Schroeder. 1974. Colorado.

25 Using Educational Indicators for Program Accountability. Michael J. Grady, Jr. September 1974. Colorado.

26. *Costs of Educational Accountability: A Maryland Exploratory Study.* November 1974. Maryland.

NOTE Documents with ERIC reference numbers can be obtained through the usual ERIC procedures

Copies may be obtained from:

STATE EDUCATIONAL ACCOUNTABILITY REPOSITORY
WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
126 LANGDON STREET
MADISON, WISCONSIN 53702